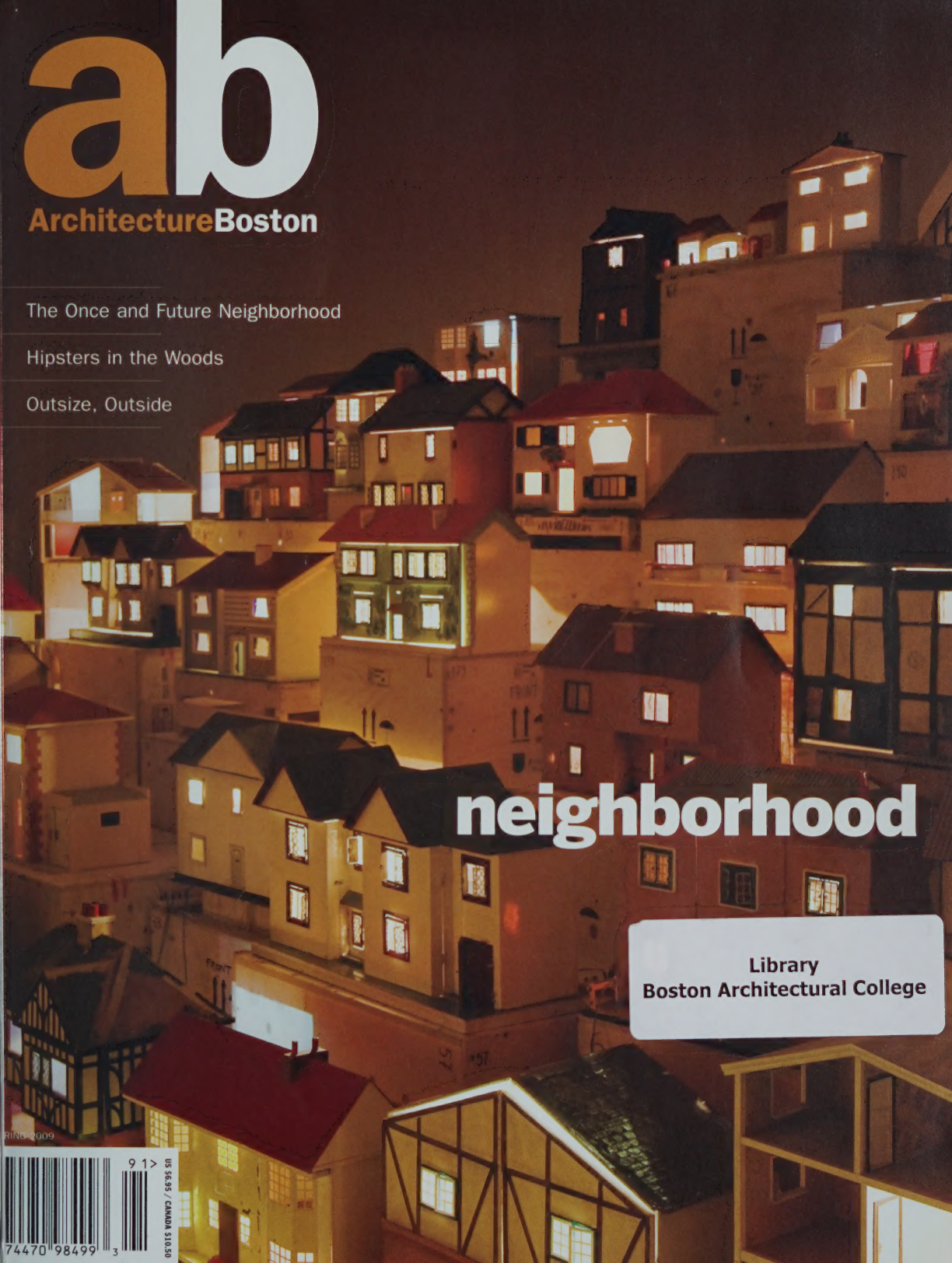
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Cover: *Place (Village)*, 2006–08, installation by artist Rachel Whiteread from Museum of Fine Arts, Boston exhibition *Rachel Whiteread* (October 15, 2008–January 25, 2009). Courtesy the artist and Gagosian Gallery, London. Photograph © Museum of Fine Arts, Boston.

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neighborhood

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What's in a Name?

OK, so it's a cliché to pine for the Old Neighborhood. But how about this: I miss my old online neighborhood.

Back in the day — the pre-Web, pre-broadband day (in this case, the late 1980s and early 1990s) — Compuserve was the dial-up online service of choice. Sure, AOL was available: flashy, sometimes trashy with its ubiquitous free-trial offers, it was bigger and eventually more successful. Compuserve was a little more expensive, but it appealed to a lot of smart, inquisitive people (perhaps a given in the early days of online services) who were attracted to the quality of its forums. These forums — essentially discussion groups moderated by "sysops" who were compensated on the basis of their forum success — focused on specific interests. I belonged to writing and journalism forums, in which writers, editors, and agents discussed professional concerns, offered advice, critiqued work, and developed friendships in the process.

Forums, of course, are common today on the Web; many of them even sustain a strong sense of community. And though I frequent several, I have rarely found the equivalent esprit of my old Compuserve community. Compuserve members in theory had anonymity — the original addresses were numbers — but within these writers' groups, most real names were known. Really known. I could pick up major newspapers and recognize bylines, or walk through bookstores and find bestsellers by my Compuserve pals. I once found a novel by a new mystery writer — our forum had given her advice on the title.

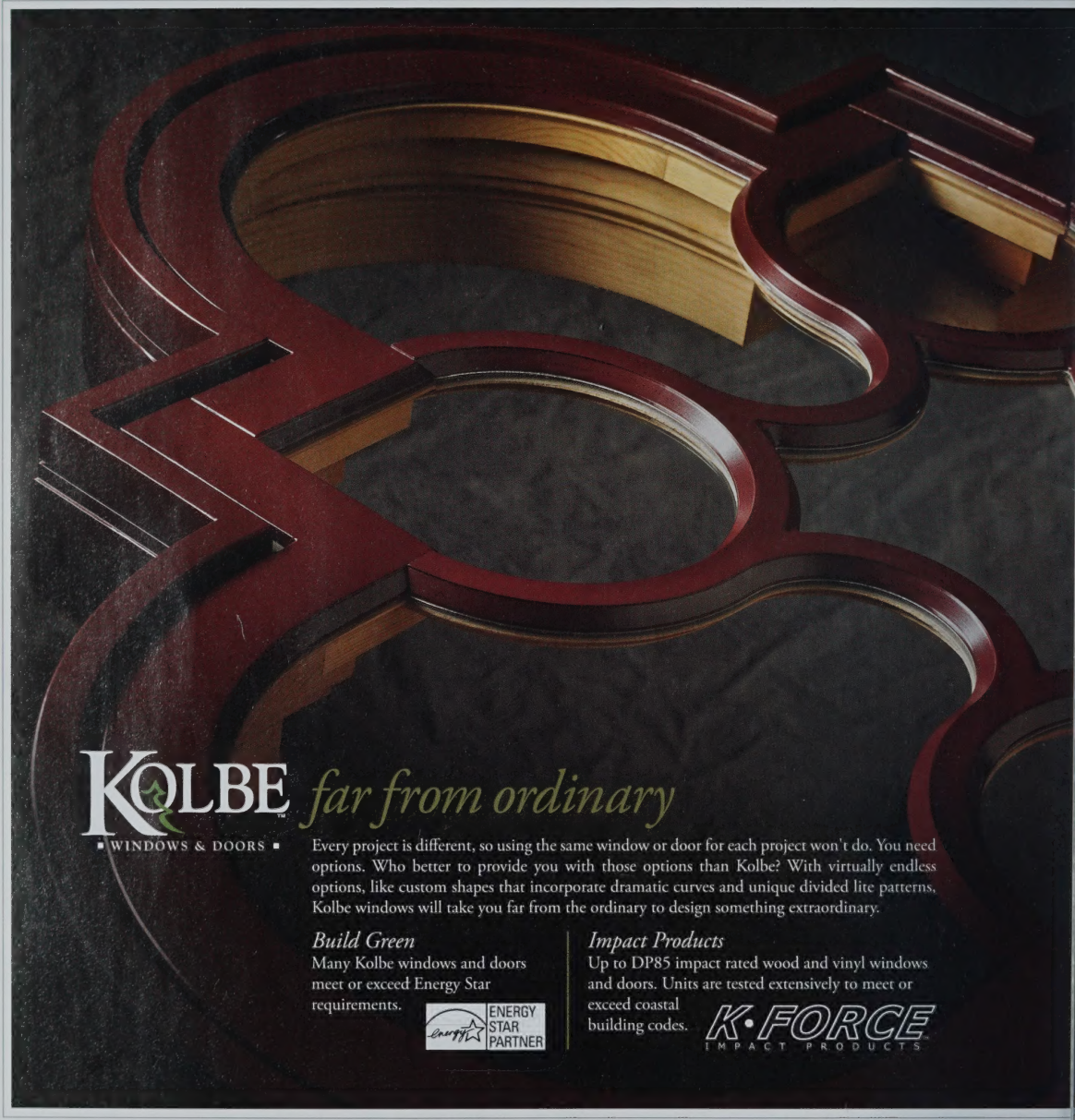
With corporate changes, competition, and the growth of the Web, eventually members began to move away, as do residents of any neighborhood. I moved, too — both my virtual and my physical neighborhoods. And suddenly my virtual and "real" lives were weirdly similar. I had left a neighborhood in a historic district in a small city — the sort of place where you know every house and have been to parties in most of them — for a woody suburb, where my work was interrupted one afternoon by the sound of sirens. Rushing across the street, I found my neighbor's house on fire; people ran from houses nearby to offer help. I didn't know many of them by name — I was new. But I was shocked to realize that even people who had lived there for several years didn't know one another. As the house burned, we made introductions.

The question of what makes a neighborhood (and the related question of how to create one) has long occupied planners and architects. Technology, a mobile society, economic conditions, and demographic shifts have all recast the discussion, rendering it more urgent — even as we as individuals have adapted, satisfying our need for community in different ways. Previous generations discovered that the urban neighborhood could replace the village; similarly, we now find ourselves at home in virtual neighborhoods at work and online.

I was shocked to realize that even people who had lived there for several years didn't know one another. As the house burned, we made introductions.

Whatever their form, most neighborhoods share some attributes, a fact that is underscored in a remarkable book, *The Last Days of Old Beijing* by Michael Meyer. Written by an American schoolteacher who lived for two years in a shared courtyard house on one of Beijing's *hutong* (lanes), it is the story of life in a centuries-old district under threat of demolition. Despite differences of culture, history, and architecture (the courtyard houses often present blank walls to the street), Western readers will recognize the sense of neighborhood in Meyer's *hutong* and perhaps come away with a fresh understanding of a neighborhood's essential ingredients: density (a critical mass sharing space, whether real or virtual); shared interests or values (which might be based in religion or ethnicity, activities, local schools, or something as mundane as a condo agreement or threat of development); and social intimacy. A community is a place where you recognize and smile at familiar faces. A neighborhood is a place where you know the faces by name and ask after the family. ■

Elizabeth S. Padjen FAIA
Editor



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I would add a sense of urgency to Jean Carroon's engaging case for the importance of historic preservation in creating sustainable architecture ["A Building Is a Terrible Thing to Waste," November/December 2008]. We must immediately reduce our impact on the environment by our buildings, or the environmental destabilization to which they contribute will render the earth hostile to life by the year 2050. We must give up on our impulse to hermetically seal ourselves off from the environment, and re-engage our history. We need to remember how to be hotter, colder, and darker than we have grown accustomed to in our modern, unsustainable buildings. We must remember what it was like to live and work in the same place.

Carroon rightly concentrates on embedded energy, but there are other sustainable features associated with historic buildings. Many buildings built before 1910 utilize inventive passive systems that conserve as much energy as some of the latest technology. Preserving these structures not only puts those systems back in the service of sustainability, but also provides a catalogue of best practices that can also be applied to new construction.

This effort must be linked to LEED. LEED has proven itself strong enough to move us quickly forward, and is particularly effective when certification brings tax-incentives, quick approvals, and easier access to loans and grants. Still, the relationship between LEED and historic preservation must be strengthened. A refined new standard for historic buildings (LEED-HB) should be developed; this is something your readers can act on immediately by contacting the United States Green Building Council.

As Carroon makes clear, sustainable design and historic preservation must collaborate. Preservation must allow for green intervention and modernization. Architecture must stop prizing individuality and novelty over conservation and embrace historic preservation. States and municipalities must be flexible with codes and regulations to allow this synergy to take place.

We need to remember that the best buildings — in the past and the future — are both machines for living and works of transformational art. While we are perfecting our technology and standards, we must create a new aesthetic of sustainable beauty that we can pass on to future generations.

Daniel Snydacker
Pequot Library
Southport, Connecticut
Adjunct Professor of American Architecture
History and Green Architecture
Fairfield University

Jean Carroon's excellent article reinforces the initiatives now underway to save Boston City Hall. Building a new city hall — or, even worse, tearing down the present building — is the ultimate expression of wasteful, unsustainable practices characteristic of the 20th century. At the invitation of Boston City Councilor Michael Flaherty, we have been testifying in support of sustainable practices for the planning of a revitalized, green, and well-loved city center.

In 1996, as co-chairs of the BSA's Architects for Social Responsibility committee, we received an award from Mayor Menino for our work on promoting sustainability. With that encouragement, as faculty members at Wentworth Institute of Technology, we offered a course on the sustainable renovation of City Hall. Our continuing research makes a compelling case for retaining City Hall.

The building can be made much more efficient by reclaiming 130,000 square feet of space by enclosing the now-open space on the fourth floor and adding a new roof level covering most of the top floor. The building can take advantage of this new atrium by integrating a new state-of-the-art heat-recovery ventilation system, low-VOC materials, and plant bio-filters and water features. The substantial savings gained by upgrading mechanical systems and insulating and air-sealing the existing building, coupled with the additional income from the new real estate, will finance the construction cost for this renovation in less than nine years. By using best practices, future operating costs along with the energy use and carbon footprint of the building can be reduced by up to 75 percent.

The unfinished, unappreciated, but sophisticated armature of City Hall can be completed and thus transformed into an attractive home for the City by adding better lighting, color, and finishes to humanize the interiors. By better connecting the inside with the outside with windows and arcades cut into the base, the building can lose its fortress-like character. Plantings and greenery can soften it with "living" walls.

City Hall is well located at the city center, allowing for easy access. There is much less disruption and cost associated with keeping City Hall than with moving and building in a new location. With the embodied energy equivalent to about seven million gallons of gasoline, plus the substantial additional energy and pollution associated with tearing it down, the building should be saved. A truly sustainable City Center should be redesigned in an open competition with the participation of citizens and neighborhood groups.

If we are unable to reverse the current trends of global warming, scientists inform us that City Hall could become waterfront property, with Quincy Market and much of the Boston area flooded from a potential sea-level rise of at least 10 feet. To avoid this horrific scenario, we believe that Boston must seize this opportunity to provide leadership and act as a model for the rest of the city and country to follow, by the greening and saving of Boston City Hall.

For more information: BASEA.org/GreenBCH.php.

Franziska Amacher, Henry MacLean AIA, Gerry Ives, Mark Kelley
The Green City Team
Boston

Luis Carranza's thoughtful article "Un-Modern" [November/December 2008] causes me to reconsider thoughts I've had since I began travelling to Havana nine years ago. I agree with Carranza's

words "perhaps our newly-found hybridity is one that reconciles our embrace of modernity with our desire to leave it." In the case of Cuba, this takes on a new twist.

The example of two Cuban men refilling an aerosol can is evidence of the continuing entrepreneurial will of the Cuban people. Those of us who have visited Cuba can quote myriad such examples. Adversity is the reason the Cubans have been able to keep their 1950s US cars running, although many have been converted to diesel engines and run with handmade parts replacing the original failed mass-produced components. Scarcity is the reason the Cubans save and recycle nearly everything. But this culture, shaped to a great degree by the forces of adversity and scarcity, has become what we may now classify as "modern." In many instances, Cuba has what we here in the United States want. Aside from the American dislike of Cuban Socialism (and Fidel Castro), it might now be an appropriate time to have a second look.

We are all too familiar with the Cuban model of free healthcare, childcare, and education, but as we in the United States struggle to find a more sustainable lower-carbon-footprint-lifestyle, it would do us well to see what Cuba has achieved since 1959. Adversity and scarcity has continued to shape life in Cuba but ironically these challenges have also caused a natural movement toward a completely sustainable lifestyle. Cuba is a place where nothing is wasted; where the recycling of aerosol cans and gift-wrapping paper are as natural to Cubans as it is for average Americans to fill the gas tank of their latest model SUV. Limited mobility, due to the scarcity of automobiles, has caused most of the Cuban population to work near their homes, without the need for a lengthy commute. Rapidly improving modes of public transportation are, however, encouraging greater mobility, particularly in Havana where the great majority of Cubans have always depended on shared autos and taxis as well as public transit. In the context of our rapidly warming planet, which of the two cultures is really more modern?

It is interesting, and unfortunate, to see how quickly the Cubans are now moving toward an oil-dependent lifestyle, caused largely by their access to (for the time being?) low-cost Venezuelan oil and their desire to become more "modern" as they gain personal wealth in a post-Fidel Castro economy. As Cubans rush headlong into an obsolete definition of "modern," they would be well served now to re-evaluate their options by reconciling their embrace of their new-found modernity with their desire to leave it.

Leland D. Cott FAIA, LEED
Bruner/Cott & Associates
Cambridge, Massachusetts
Adjunct Professor of Urban Design
Harvard Graduate School of Design

We were dismayed to read the cursory reference to the cost of the Newton North High School project in the "Periodical Roundup" section of the November/December 2008 issue. In professional architectural journals, we have a right to expect a higher standard when discussing complex building issues, rather than just repeating a tiring line from the mass media. A more thorough review in comparing cost of this project to other public schools would reveal: it is a big project — over 400,000 gsf with extensive site development, including a turf stadium; it has an elaborate program — "clues" include an indoor track, natatorium, vocational/tech ed, and instructional kitchen with a public café; its costs include demolition and remediation of a 460,000 gsf existing school; it has extensive and extremely costly remediation of hazardous materials spread throughout the site after the 1960s demolition and burial of old building debris; and it had an extended public review and referendum process which delayed the project for a year when cost escalated over 10 percent.

It does our profession little good to repeat popular misconceptions in the BSA's wonderful architectural journal.

John A. Prokos FAIA
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Gund Partnership
Cambridge, Massachusetts

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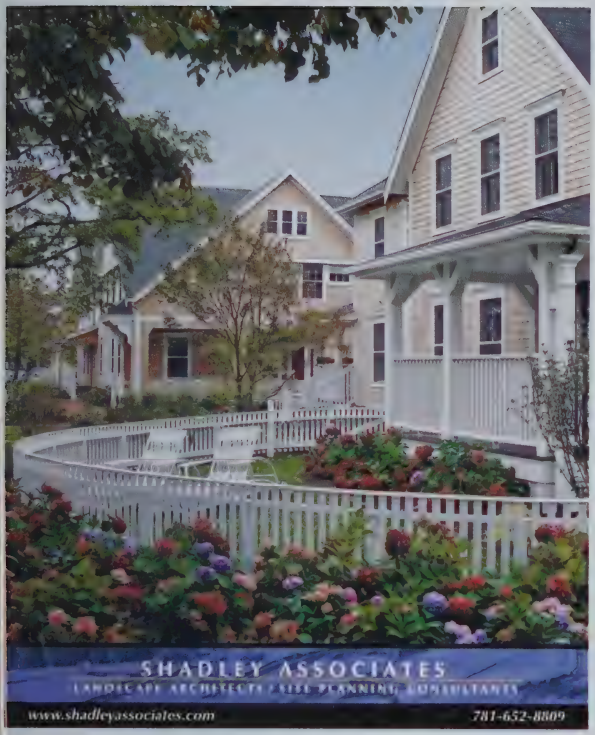
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Predatory Tales (video produced in cooperation with Lawrence Community Works).

Red Lines, Death Vows, Foreclosures, Risk Structures

MIT Museum Compton Gallery
September 9–December 21, 2008

The sound and smell as one enters the windowless black-box space is reminiscent of another Cambridge venue, the American Repertory Theatre — prepare to be intrigued. This rendering of the causal relationship between housing finance and the residential built environment is as much theater as art installation.

You and I look at a house, and we see a house. This creation of Damon Rich and his Brooklyn-based Center for Urban Pedagogy looks at a house and sees everything but the house — appraisals, interest rates, government-sponsored enterprises, subsidies, bankers, real estate agents, stocks and bonds, politics and policy. A taste:

- A walk-in topographical model of a human head takes us into the mind of an appraiser.
- A plywood graph of the prime rate since 1929 forms a rectangular corral surrounding the S&L Railroad — a model train with a portion of its circular track laid conveniently "out of state."
- Realtor lawn signs framing photographs of housing in Detroit are set out geometrically by neighborhood.
- The sound track of a large-format, 40-minute split-screen video discourse involving 22 individual mortgage stakeholders — owners, lenders, bureaucrats, and politicians — fills the gallery as both the glue that ties the exhibition together and an insistent interruption to comprehending the rest.

FHA, CRA, FHLB, FNMA, FHLMC, NTIC, HOLC, GNMA, MBA, ABA, and so much more — you get the picture. They are all here. They relate to one another and, like it or not, it's why financing is where the home is, and therefore, the heart.

Finley H. Perry, Jr. is the founder of F.H. Perry, Builder in Hopkinton, Massachusetts.

(The exhibition will be at the Queens Museum of Art in New York from May 31–September, 2009.)

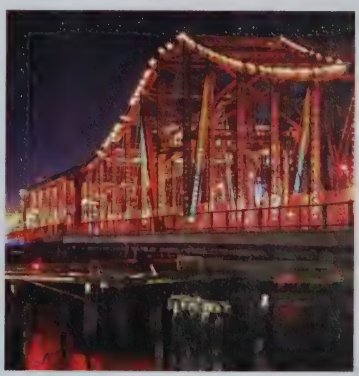
Illuminale Boston

October 1–5, 2008
(www.illuminaleboston.com)

The Boston waterfront was aglow with light during the five-day Illuminale Boston festival. The brainchild of Lana Nathe of Light Insight Design Studio, this ambitious project was intended to promote awareness of lighting in the night-time urban environment by creating innovative and energy efficient contemporary lighting schemes on Boston landmarks. The festival coincided with the inauguration of the Rose Kennedy Greenway, and featured 10 sites, including the four bridges across Fort Point Channel, the Custom House Clock Tower, Rowes Wharf, South Station, 175 Federal Street, and Legal Sea Foods building.

Some sites were more successful than others; lighting of the Northern Avenue Bridge, designed by Fisher's Lighting Consultants, in particular drew criticism for its monotony. The permanent conversion of the Custom House lighting from halogen to LED was probably the best example of energy efficiency. With plans to expand the festival to more sites and to make it an annual event, the future is, yes, looking bright.

Lana Nathe is a photographer specializing in night photography (see photo below). (www.thenightseer.com)



Designing For Life: Medellín | Caracas

Wentworth Institute of Technology
Symposium: September 22, 2008

Step One: Get into power. Step Two: Transform the city. Sounds easy, right? It certainly couldn't have been that simple, but the essential strategy is clear, and powerful. At the keynote lecture of Wentworth Institute's "Designing For Life" symposium focusing on the lessons and successes of Medellín and Caracas, Sergio Fajardo Valderrama PhD, mathematician-turned-mayor of Medellín, described the extraordinary series of public-works projects his administration accomplished. Just 15 years ago, the Colombian drug wars made Medellín the most dangerous city in the world. Since then, homicides have decreased significantly, yet poverty and corruption still prevail. Mayor Fajardo was elected in 2004 pledging honesty, transparency, and dignity for all citizens.

As his administration reduced violence, it created social opportunities and made the political decision to invest community resources in good design. With equal parts Olmsted and Obama, Fajardo "turned fear into hope," using infrastructure improvements to build great parks and public facilities. The poorest neighborhoods received expanded public transportation systems as well as five award-winning libraries, dozens of schools, daycare centers, and art galleries, dramatically making a statement to residents about the dignity of their daily lives. Few professionals had dared to imagine that such buildings might ever be built in the barrio; still fewer citizens had ever seen buildings like these, much less built for their use. "Here are your taxes at work!" the mayor boldly and passionately proclaimed.

The son of a prominent architect, Fajardo explained in his lecture that he was simply a mathematician who decided to get involved. He saw corruption stealing opportunities and furthering deep social inequalities, and he wanted this to change. Medellín has mandatory term limits; Fajardo had only four years to deliver.



∧ **Parque Explora [Exploratorium Park] in Medellín. Architects: Alejandro Echeverri and Grupo de Trabajo. Photo by Carlos Tobon.**

(He left office with 80-percent approval ratings and is now a presidential candidate for 2010.) Again and again, Fajardo showed symposium attendees stunning before-and-after photos, reiterating how design sends a very important message to all citizens that they, in turn, will live up to. The underlying theme was that architecture is political; with progressive leadership, it can be wonderfully and inspiringly so.

Gretchen Schneider, Assoc. AIA, is the principal of Schneider Studio in Boston.

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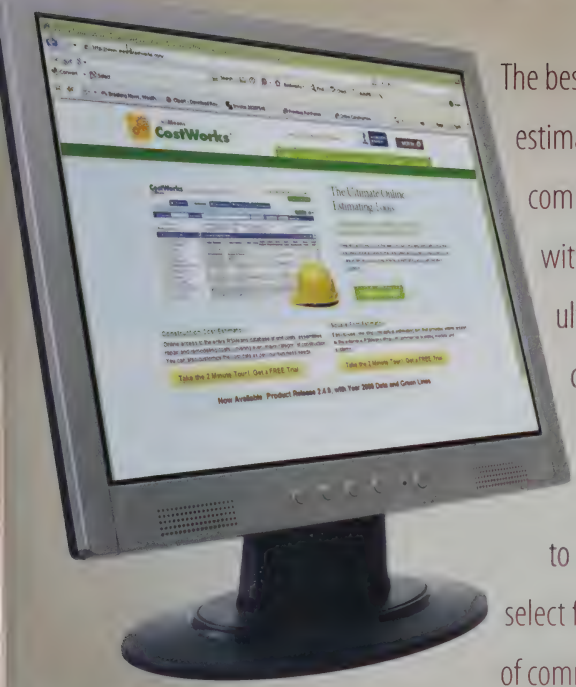
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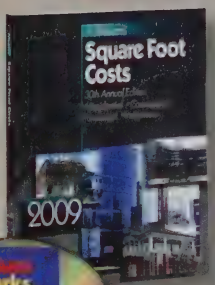
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The place: The Institute for Human Centered Design, a nonprofit organization devoted to creating, promoting, and researching universal design — sustainable places that work for everyone, regardless of physical or cognitive ability.

What you notice first about the office: It's gorgeous. Sleek, warm, spacious, and light, with a long row of windows running along the street.

What you notice next: Everything is designed to be universally user-friendly. The space under kitchen counters is unobstructed, to allow for wheelchair access. The microwave and dishwasher are drawers mounted at accessible levels, and are free of knobs that would be difficult to operate for someone with arthritis or carpal-tunnel syndrome. The restroom is equipped with a digital bidet, an assistive device for those who have limited mobility; to help people with sight or cognitive disabilities, the control panel features large, easily comprehensible visual icons.

The executive director: Valerie Fletcher, who joined the staff in 1998 after serving as deputy commissioner of the Massachusetts Department of Mental Health.

9:45 Valerie and staff member Maura Parente are looking at carpet samples. The Boston Architectural College is currently expanding into the old ICA building on Boylston Street, and IHCD is creating interior spaces according to universal design principles. The plans include lowering the first floor, so that everything will be at one level, and carpeting corridors to improve acoustics.

The carpet samples are low-pile, easily traversable for someone in a wheelchair. "This is very elegant," Maura says, holding up a sample in shades of muted burgundies.

The carpet is made of recycled, biodegradable material. Sustainability is key: the Canadian tables Valerie liked for this project were not made of wood certified by the Forest Stewardship Council (FSC), so she is negotiating to order the metal parts from Canada and fabricate the tables here, using Massachusetts FSC-certified wood.

10:20 Valerie sits down with a woman named Marian who introduced herself at a conference on public health and the built environment. Marian's background includes the study of sustainability, work in public health, work as a chef and caterer, work in a group home, "and, oh, yes, I have a master's in counseling. Pretty varied."

"We like that here," Valerie says. As the two talk it becomes clear that they share a strong belief in the value of participatory processes. Valerie begins telling Marian about an upcoming project — to incorporate kid-friendly technology into the South End branch of the Boston Public Library, as part of an overall effort to re-imagine and revitalize the branches. "The players here are the neighbors. We need to go to them. The usual model is: If they can't come to meet at a time and place that works for the project team, then they don't get to play. I have found that to be singularly dumb."

11:14 Valerie interrupts herself as staff member Jennifer Otitigbe walks by. They need to follow up on a focus-group report they've prepared for a Japanese company, evaluating a line of multi-functional printers in terms of universal design.



^ Photo by Joan Wickersham.

"Jennifer, let's see what time it is in Japan." Valerie looks at her iPhone. "One-fourteen tomorrow morning."

Jennifer: "Probably not a good time to call."

Valerie: "Probably not."

11:20 Valerie's networking session with Marian has morphed into a job interview; she asks whether Marian would like to consult on the library project.

Marian is definitely interested. "I don't understand it completely, but I kind of like that."

Valerie laughs. "There's some brilliant work from different cities, looking at libraries as systems. I'll send you stuff."

11:38 A meeting in the conference room with staff members Steve Demos and Chris Hart. Chris, who was born with cerebral palsy and uses a wheelchair, is IHCD's Director of Urban and Transportation Projects. Steve is an architect. They're discussing Cape Cod Community College, where IHCD is consulting with Sasaki Associates to institute universal design. Current site conditions are extremely unwelcoming: buildings sit on a steep rise, which poses accessibility problems for the disabled and for many elderly people who attend public programs at the college. A state agency has reviewed IHCD's report and is asking for more detail, even though the budget is already stretched thin.

Universal design includes not just mobility issues, but also sensory disabilities — sight, hearing — and cognitive issues, like learning disabilities and autism.

Steve: "Are we bound by our contract, or by what they want?"

Chris: "It seems like they want a punch list for their maintenance people."

Steve: "But it's not within our scope to show an image and say, 'Replace this doorknob with a lever,' and then show another image and say, 'Replace this doorknob, too.'"

Valerie: "They want an ADA transition plan. It's in our interest to respect their request."

1:10 Valerie and IHCD project manager Josh Safdie have a networking lunch at a nearby restaurant with Tom Paine, who is opening the Boston office of a Chinese landscape architecture firm.

They talk of the future. Valerie is interested in China because of its rapid development — and its aging demographic. How to design now for a large population whose needs and abilities will change radically in the near future? "You can't invest in a project in China without considering where you'll be in 20 years."

"And everyone watches what goes on there," Tom says. "What happens in China doesn't stay in China. But if China doesn't buy in, the rest of the world won't either."

1:47 Valerie: "People think of accessibility only in terms of wheelchairs. But that's only a small percentage of the population with disabilities. The biggest issue is actually aging: arthritis, residual problems from old injuries, deficits that worsen gradually over time. Universal design includes not just mobility issues, but also sensory disabilities — sight, hearing — and cognitive issues, like learning disabilities and autism."

1:49 The restaurant is busy and quite noisy. Tom says he has a hearing problem, and asks the waitress to turn the music down. She yells cheerfully, "You want me to make it louder? Sure! I love it! Most people who mention it are old farts who want it turned down."

"No, we would like it turned down, please," Valerie says.

"Oh."

1:58 The waitress comes back with the lunch. The music is still loud. "Sorry," she says. "I couldn't figure out how to work the thing."

3:20 Back in the office, Valerie briefs Josh on 20 Rutland Square, a house in Boston's South End that once belonged to artists Joyce and James Reed, the latter of whom used a wheelchair. The Reeds left their house in trust to be developed as a physically, socially, and financially accessible live-and-work space for artists. A wheelchair lift is needed to make the first-floor-and-basement apartment accessible from the outside.

"The logical place is in the back," Valerie explains. "But Mel King, who heads the trust, feels that 'back of the building' has connotations of second-class citizenship."

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She shows Josh a rendering of a lift retrofitted to the bow-front parlor window. "Now we need to figure out how to present this to the Landmarks Commission."

3:40 They continue to discuss the project, where issues of access and aesthetics compete. "We can camouflage the lift somewhat with paint and vegetation, but realistically it's going to be homely."

Josh: "Are you anticipating neighborhood objection?"

Valerie: "I think that's a good possibility."

3:52 Josh suggests using a three-dimensional model for the presentation. He'll think about the design and the problems posed by the tight spaces both outside and inside the house.

Valerie: "The place that is comparable in terms of architecture, and so also in terms of the challenge, is London." She gives him the name of a preservation architect in London who uses a wheelchair.

4:08 A conference call to plan an upcoming Build Boston workshop about the difference between accessibility and universal design in historic preservation, using examples from religious architecture. Workshop participants Bill Barry and Ray Bloomer agree that preserving a building isn't the same thing as simply leaving it intact.

Ray, who is with the National Center on Accessibility, says, "How much can you alter a historic site to let people in? You look at the Statue of Liberty — they did a huge regrading to let people get in. Same thing with the Lincoln Memorial. These buildings are so important that you *can't* leave everything the same if it keeps people out."

Bill, a preservation architect, says: "You need to balance preservation and inclusiveness. As a client you need to establish clear objectives upfront. You need to weigh when preserving should give way to access, while still minimizing the impact on a building's historic integrity."

Ray: "We need to maintain a building's usefulness for the future. A building is just a building. We don't preserve it for its own sake — we preserve it for people."

4:50 Bill and Ray try to come up with examples of preservation projects that incorporate universal design. They mention the installation of ramps at the Concord Academy meetinghouse, and of an elevator in Faneuil Hall. "But again, those are just about mobility, not universal design," Valerie reminds them.

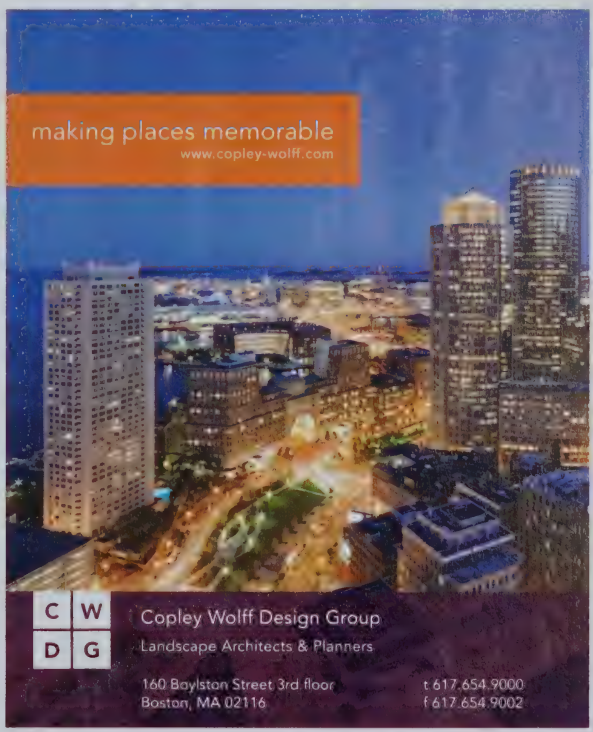
Ray asks, "Do you have an example of a place of worship that has accessibility, an enhanced listening system, large-print books?"

Everyone is silent.

Valerie says, "One thing we have underway is an international case-study database. We'll see if we can find some examples from that. And —" she adds, becoming even more animated as she envisions further networking possibilities that this workshop could open up, "this group is likely to include some top preservationists. And they may be able to point us to some stories we don't already know." ■

Joan Wickersham's new book *The Suicide Index: Putting My Father's Death in Order* was a finalist for the 2008 National Book Award in nonfiction.







Them and Us

INSTITUTIONAL EXPANSION and the NEIGHBORHOODS

- Educational Institutions
- Medical Institutions
- Parks and Green Space
- Boston Neighborhoods

(not shown: cultural, government, and other nonprofit institutions)
Source: Boston Redevelopment Authority, updated as of 2006.



PARTICIPANTS

Rebecca Barnes FAIA is the director of strategic growth at Brown University in Providence, Rhode Island. She was previously the chief planner of the city of Boston and has also served as the director of planning in Seattle.

Omar Blaik is the CEO and founder of U[3] Ventures in Philadelphia. He was previously senior vice president of facilities and real estate services at the University of Pennsylvania, where he oversaw more than $2 billion of construction on the campus and in the surrounding community.

Kevin Carragee PHD is a professor in the department of communication and journalism at Suffolk University. He is co-president of the Hobart Park Neighborhood Association in Brighton, chair of the Presentation School Foundation, and serves on the Boston College Task Force. He also is a member of the advisory board of the Urban Communication Foundation.

Steven Cecil AIA, ASLA is principal of The Cecil Group in Boston.

Elizabeth Padjen FAIA is editor of *ArchitectureBoston*.

Alison Pultinas is a member of the board of the Mission Hill Fenway Neighborhood Trust, a founder of the Friends of Historic Mission Hill, and serves on the steering committee of the Mission Hill Youth Collaborative, representing the Mission Hill School, a pilot K–8 school.

Kairos Shen is the chief planner of the city of Boston, a role that includes oversight of economic development, institutional planning, and research and policy development within the Boston Redevelopment Authority.

David Spillane AICP, RIBA is a principal and the director of planning and urban design at Goody Clancy in Boston.

Elizabeth Padjen: The issue of institutional expansion is a point of contention not only in Boston, but also in many communities across the country. This has come at a time when many institutions have undergone enormous change. Colleges and universities that once were house-like in their physical scale now occupy block-size office buildings and dormitories in their surrounding neighborhoods. Hospitals that were once community-based are now subject to corporate organizational structures and decisions that are made miles away. And although current economic conditions are providing what we might euphemistically call a breather, the enormous wealth in our society in the last decade generated healthy endowments and willing donors that fueled unprecedented physical growth. Even if construction resumes at a slower pace, the decisions that have been made in the last decade will affect institution/neighborhood relations in the years to come.

In the meantime, the neighborhoods themselves have changed, too, in some cases quite dramatically through gentrification and demographic shifts. When people talk about "the neighborhood" in these conversations, what do they mean? What are the qualities and the assets that they're trying to protect, that form the basis of these negotiations?

Kevin Carragee: It's always a political act for anyone to define who the neighborhood is or what its interests are. And although I live there, I can't speak about Allston-Brighton as one neighborhood and one community, because there are multiple voices that have different interests. But when people in Allston-Brighton speak about institutional expansion, they are concerned about a declining sense of community, an increasingly transient neighborhood, and a loss of important community anchors, such as schools. And now with the expansion of Harvard into Allston, they have an increasing awareness of the fragility of their neighborhood. Two of the three major universities in our neighborhood were commuter colleges no more than 40 years ago — Boston University and Boston College have totally transformed their self-definitions. People feel that some of that transformation has had devastating effects on parts of the neighborhood.

Steven Cecil: One of the challenges in neighborhood planning is the idea that there is a static, easily defined neighborhood out there. In fact, there are changing demographics, citizenry, identity, and internal issues that are constantly in play. When an institution gets involved, the focus turns to the entity that is making the most obvious change. We have to make sure that the focus is on the neighborhood and what makes a great neighborhood, as opposed to a series of development or design opportunities. If we can appreciate the dynamics within the neighborhood, then the relationship is going to be on stronger footing.

Elizabeth Padjen: Are neighborhoods aware that they themselves are evolving, apart from the institutions, or does someone need to point that out to them?

Rebecca Barnes: Participants in planning processes often bring to the table a set of assumptions that are based to some extent on current conditions but to a great extent on past conditions and their own world view. And that's where the enormous contention

comes in. When the city and the neighborhoods are engaged with each other and with other powerful stakeholders like universities or hospitals, there is potential for an important mutual education process. And that can alter the dynamics as everyone comes to understand how the neighborhood and the institution have changed, and what their current needs and values are. That in turn gives rise to new thinking about what is possible. And of course institutions change, too, with each new administration. The leadership inside the institution establishes its priorities, including how it communicates and interacts with its neighbors and the city. Leadership matters — the differences can be dramatic.

Elizabeth Padjen: Are there any examples of institutional expansion that are known to be models of disaster? Is there a Pruitt-Igoe of institutional development that proved to be a turning point in how people approach the issue of institutional expansion?

Kairos Shen: In many cases, the real disasters are not built — the disaster occurs in the process itself. But every university I know has a building that was probably a watershed in its relationship with the surrounding community, the kind of project that was the perfect storm of bad process, bad design, and ultimately a bad outcome. The challenge is to learn from those.

Omar Blaik: Some of the most disastrous work was done during the urban-renewal era. Institutions were given the authority through eminent domain to raze block after block of struggling neighborhoods that still had life and richness in them. In their place, they created institutional superblocks that the city then retreated from and created a no-man's-land zone around. And that's at the heart of many urban institutional ills that we see today.

> Every university I know has a building that was probably a watershed in its relationship with the surrounding community, the kind of project that was the perfect storm of bad process, bad design, and ultimately a bad outcome.
> *Kairos Shen*

Elizabeth Padjen: Are there examples that are considered to be models of effective partnerships between institutions and their surrounding communities?

Kevin Carragee: Some people in Allston-Brighton have been drawn to the good work that Clark University has done in Worcester, partnering with a troubled neighborhood in a troubled city. Trinity College has undertaken some successful initiatives in Hartford. One of the telling things about both, though, is that sometimes those strategies that seem to work best can happen only when a neighborhood is close to an economic or social tipping point or in fact has already tipped a bit. It would be wonderful if the partnerships could be forged much earlier, when the neighborhood is still robust.

Rebecca Barnes: Arizona State University offers a totally different model. Its president brought in a consultant, who's now on the faculty, to look at everything the university does in terms of its potential for achieving community goals. To me, that is at the far end of the spectrum from most university/neighborhood relationships because, typically, the relationship with the neighborhood is not a university's principal focus — education and research are. Neighborhood relationships become a focus when there's a problem. Universities tend to assume that their presence fosters a mutually beneficial relationship, with a lot of passive if not active contributions to the community. Universities are not typically oriented or structured to attend to neighborhood priorities; they do that when there's a crisis, or when they want or need something, or when it is consistent with their missions. But Arizona State has a leader who says that community engagement is such a big part of what a public university should be that he wants to look at everything it does from this point of view. There is no conclusion yet about whether the outcome will live up to the expectation and the goal, but it's worth learning from this very unusual model.

David Spillane: There's an increasing recognition of the interdependence between institutions and the neighborhoods. Historically, we had more unfettered institutional expansion with less understanding of the neighborhoods. Now, there's a much greater awareness of the potential impacts, both positive and negative.

Ohio State University is another example of an institution helping to stabilize the neighborhoods around the university. It has been working for about a decade to become more involved in affordable housing and a range of economic development initiatives. Emory University in Atlanta has a different set of issues. It's an institution with a beautiful campus, surrounded by beautiful, prosperous neighborhoods. But in-between, there's an appalling sprawl landscape — surface parking lots with thousands of cars. Emory was concerned about this wasteland that was building up around its campus, so it established a university/community partnership called the Clifton Community Partnership as a platform for the university and the neighborhoods to work together to address some of those issues.

Some of the other institutions that have been involved in this for a very long period of time have established not-for-profit partnerships that have as their mission a shared agenda of revitalization and renewal. That's certainly true at Ohio State. It's true now at Emory. The University of Cincinnati in partnership with four other medical and educational institutions formed a similar organization, the Uptown Consortium, with a dedicated staff that is also working on these issues over the long term.

Alison Pultinas: During the presidential campaign, it was reported that Barack Obama's children attend the University of Chicago Lab School — that's an example of a wonderful educational partnership that we don't have in Boston. None of the universities in Boston or Cambridge has anything equivalent. Northeastern had an opportunity to pursue something like that with its development on Parcel 18 in lower Roxbury, but it didn't. Daycare is similar — these campuses all have daycare centers for their own staff, but there's no cross-registration with the community. These are missed opportunities to bridge the racial and class divide in our city.

The hospitals in the Longwood area have a different mission: they are the provider and the community is the client, so it's a different relationship from the schools. There are good examples of partnerships with hospitals. But, like universities, hospitals can engender distrust when they start purchasing buildings without telling people. In Mission Hill, the Lahey Clinic bought residential property in the 1970s — buying up the triple-deckers and tearing them down — and then changed its mind and moved to Burlington. And we were left with acres of vacant land for almost 30 years.

Elizabeth Padjen: And the memories of those things tend to linger on.

Alison Pultinas: Yes, and people are bitter.

Elizabeth Padjen: The memories and suspicions that linger bring us to an interesting part of this whole dynamic, which is the communication piece: what gets told, or what doesn't, and how it gets told. We now have amazing visualization tools for communicating design and development ideas to communities. Some institutions are even using the online virtual world Second Life to help people understand what might be going on in their neighborhood. Blogs have become increasingly significant, not so much as channels of communication from the institutions to the neighborhoods, but as a community discussion medium. A quasi-underground level of discussion goes on among blogs, where people participate in ways they can't through the traditional media. Ideas get launched, fights get started, weird stuff happens. It's sort of a Wild West of communication.

Kairos Shen: Blogs can foster discussions that couldn't happen in a traditional community meeting, but you can never know how representative they really are of the community as a whole. And of course, they are not always civil. One of the difficult aspects of these planning processes is that the number of involved people tends to dwindle over time. And when you look at who's actually blogging, you find it's a very limited number. It's similar to what happens at a real meeting: the people who have the most energy and speak the loudest dominate the conversation.

Kevin Carragee: Despite the uncivil postings, online media give you the ability to reach people who weren't reached before, with master plans and documents and comment letters that are posted on websites. Sometimes you get four pages from someone writing at 12:30 at night, who has actually studied these documents at great length and has some very important things to say. I think online media have mobilized people who previously have not been involved. And they play an even more important role because, sadly, with the diminution of city coverage and resources and readers, traditional newspapers don't keep as careful an eye as they used to.

The community always speaks in multiple voices, since it comprises multiple communities and multiple interests. The universities or the hospitals might speak with multiple voices internally, but a single voice speaks externally. Therefore, it's very easy for big institutions to say, well, there's no community consensus, because communities speak in multiple voices that

> We tend to take institutional expansion as a given. We may find that this relationship will shift to one that more overtly focuses on nurturing the institutions and supporting the value they bring to the economy.
> *David Spillane AICP, RIBA*

are sometimes conflicting. But often there's actually no internal university or hospital consensus either, but a decision's been made to speak publicly with a single voice, as though total consensus exists. And that is just a structural inequity in the debate.

Rebecca Barnes: One of the important things that we should talk about is trust. You don't develop trust in your own life if you just deal with somebody when a crisis is at its hottest. You can deal with a crisis in a different way if you've previously established a basic trust relationship. The institution has the same ability as the community to put things online and make them accessible. It's about being part of the community on an ongoing basis. That's the bottom line — are we in this together or not? Trust is probably a major factor in the success stories and a missing ingredient in the catastrophes.

Kairos Shen: And trust requires that the neighborhoods understand why the institution has to undergo change, and that the institution understand the community's expectations about participating in the change. That has to be the foundation of the discussion.

Rebecca Barnes: There is great value in transparency. I think that's a very new idea for most institutions.

Kairos Shen: I agree with you. Right now, one in four jobs in the city of Boston is in either hospitals or higher education. That's a profound number. The economic-development contribution of these institutions is incredible, yet we still don't always fully appreciate it.

Steven Cecil: But a lot of communities that are starving for money instead tend to look at institutionally owned property and see it in terms of tax revenues they're not receiving. They don't think in terms of indirect benefits. A number of institutions and communities are beginning to experiment with new kinds of partnerships that can bring direct economic benefits. The fee-in-lieu-of-taxes system is an early phase of this. But we need to make sure that both the direct and indirect benefits are real, recognized, and understood, because the interdependency is profound, especially in New England.

David Spillane: We tend to take institutional expansion as a given, because we've been living with it for so long. Institutions have continued to expand through almost every economic cycle. But, for example, we're now at a point where college enrollments are actually declining. This is why we continue to need to be proactive, in terms of strengthening area colleges as well as their surrounding neighborhoods. We may well find over time that this relationship

The Institutional City



Of the 50 largest private employers in Boston, 21 are institutional (higher education, medical, nonprofit). Nearly 50 percent of the land in the city of Boston is tax-exempt.

Half of the tax-exempt land is owned by city, state, or federal governments. The other half is owned by private nonprofits, including schools, hospitals, churches, and other charities.*

Tax-exempt institutions pay the city of Boston $32.4 million annually in PILOT (payment-in-lieu-of-taxes) payments. If their properties were taxable, the total would be 10 times that amount — between $350 and $400 million.*

HIGHER EDUCATION:

Total number of higher-ed institutions in Boston: 34 universities, colleges, professional and graduate schools, and community colleges

Total student population: 145,274 (fall 2006)

Boston, with only 10 percent of the state's population, has 33 percent of the statewide college-student enrollment.

Largest university: Boston University, with 32,212 graduate and undergraduate students (fall 2006)

Number of students living in on-campus housing: 32,000

New dormitories in Boston (2000–2007): 23 dormitories with 7,321 total beds

Number of dormitories currently under construction: 5 (Wheelock, 115 beds; Emerson – Colonial Building, 364 beds; Emerson – Paramount Center, 262 beds; Northeastern, 1,200 beds; Boston University, 960 beds)



MEDICAL:

Health services represent more than 1 out of every 6 jobs in Boston, with a total of 115,341 health services jobs (2007).

The number of hospital employees in Boston between 2005 and 2007 grew from 73,525 to 79,469.

Number of inpatient hospitals in Boston: 21

Number of hospital beds: 6,224 (2006)

In-patient admittances: 200,150 (2006)

Outpatient visits: over 5.8 million (2006)

National Institutes of Health [NIH] grants to Boston hospitals: $1.619 billion (2006)

Boston's rank among US cities receiving NIH funding: 1 (for 13 consecutive years)

Boston's share of competitively awarded NIH funding: 7.7 percent

Sources: Boston Redevelopment Authority, except *The Boston Globe* where indicated by *.

will shift to one that more overtly focuses on nurturing the institutions and supporting the value they bring to the economy.

Kevin Carragee: It's a good point. For example, the Archdiocese of Boston has been contracting; what will replace those churches, schools, and community centers? In my neighborhood, the community mounted a campaign to purchase a closed school and maintain it as a community anchor.

Elizabeth Padjen: Tom Keane wrote a piece recently in *The Boston Globe Magazine* encouraging people to think more positively about the presence of institutions as economic generators. But at the same time, he acknowledged that there may be a different future for these institutions, especially the schools, that we can't imagine right now — for example, if distance learning becomes the trend because of financial pressures and generational shifts, the schools may well contract.

David Spillane: It's clear that almost all the problems that people experience with institutions in the city are the problems that go with success. These are much more appealing problems than the problems that go with failure, but that doesn't take away the fact that they're problems. If one in four of the jobs in your community is driven by these institutional economies, it's clear that changes in that sector could have very profound effects on the surrounding communities.

Elizabeth Padjen: We have already seen competition for students, which has driven a lot of construction in universities and private schools recently — schools realized, for example, that many students prefer to live in luxury condo-like residences instead of old-style dorms. At the same time, more educational institutions have realized that their surrounding communities affect their marketing. Part of what drove Yale to pay attention to New Haven, certainly, was the sense that New Haven was falling behind and prospective students were noticing. Omar, was that part of what woke up Penn to its neighborhood in Philadelphia?

Omar Blaik: Definitely. Penn was eventually able to turn around 20 or 30 years of mistrust. And that didn't happen by having a better newsletter or inviting the neighbors to a free barbecue during the Penn-Harvard game. Trust started to take root when the boundaries between the institution and the neighborhood dissolved, when people like me, who were administrators at Penn, moved into the neighborhood. For the first time, administrators would arrive at the campus, not by driving off the highway from the very rich suburbs at the front yard of the campus, but by biking or walking from the neighborhood that was at the time the back side of the campus. With this kind of fluidity between the neighborhood and the institution, a lot of problems get solved without having to create a committee, without having to issue one executive order or another. People used to criticize Penn because Penn was faceless in the neighborhood. But when administrators and deans and vice presidents live in the neighborhood, you can't criticize them as much because their kids go to the same school as your kids, and they have soccer practice together. Suddenly those relationships become more human — they are no longer institution versus neighborhood.

The pattern of absentee landlords who rent to undergraduates destabilizes neighborhoods that might be otherwise strengthened by faculty and staff owning and living in the triple-deckers and the two-family houses.
Kevin Carragee PHD

Elizabeth Padjen: Did the university suddenly change its housing policies? How did it encourage people to live there?

Omar Blaik: It happened by working with the community, and through incentives and targeted real estate acquisitions. It started in 1997, when less than five percent of faculty and staff lived in the neighborhood. Today it's about 25 percent. It's not a huge number, compared to the University of Chicago, where more than 50 percent of faculty and staff live around the university. But it is a significant enough presence in the neighborhood that many issues can be addressed informally, and get resolved purely through the self-interest of those who live and work there.

Alison Pultinas: I agree completely with what you're saying. It was frustrating when Northeastern bought its new president a townhouse on Beacon Hill and not in the Fenway neighborhood. It could have made a real statement of commitment to the neighborhood. Wentworth owns four rowhouses near the Museum of Fine Arts. I was part of a neighborhood coalition trying to negotiate between the city councilor and the university, to say that those rowhouses should be faculty housing, not undergraduate housing. They were adjacent to family-owned housing and, given Wentworth's low number of undergrads, it made no sense to keep them as undergrad housing. Yet they are still using them that way — another real disappointment. The presence of resident faculty and staff can help to restore a neighborhood and to connect people on a one-to-one level.

Omar Blaik: And it's a huge benefit, not only for the city or the neighborhood, but also for the educational experience of the students. We can all remember the one faculty member who invited the class for dinner or was able to meet after hours in a coffee shop next to campus because she or he lived near campus. It enriches the educational experience of the students much more, and it serves as a reality check, as opposed to somebody who comes in from somewhere else, shows up for office hours, then leaves for the safety of the suburbs.

Kevin Carragee: It's also an ill use of residential housing stock to have undergraduates living in large parts of our neighborhoods. The pattern of absentee landlords who rent to undergraduates destabilizes neighborhoods that might be otherwise strengthened by faculty and staff owning and living in the triple-deckers and the two-family houses.

One recent statistic has struck me: Boston ranks 95th out of the 100 largest American cities in percentage of children under 18. We're five from the bottom. This is a very expensive city for working people and families. It strikes me that a winning

strategy to counter this trend would be to move students into dormitories on campuses in order to open up that student rental housing stock to families, including people who work at the universities. And it would be environmentally sustainable, too, because people could walk or bike to work, or take mass transit.

Steven Cecil: One of Jane Jacobs' great observations was that neighborhoods break down at their edges. So she was all about erasing the edges. If you do that well and you do it consistently, great neighborhoods evolve.

Traditionally, from the institutions' point of view, the edges of the neighborhood are barriers — that's where the dangerous things happen, where the strange people who aren't part of the institutional community are. So they build the equivalent of moats, which make things worse. The challenge is to smudge those edges together. Having the vice president living in the community erases an edge.

Elizabeth Padjen: Does that model apply as well to hospitals and medical centers? Or are they different?

Omar Blaik: It still applies in a general sense, although student housing is of course a different issue. Anchor institutions, whether they are hospitals or higher-education institutions, have two assets that create an opportunity that few people really understand: they have a vast resource of real estate, and they have a sustained demand of users. That means that hospitals and universities have an opportunity that's not available to many other industries, which is to devise development tools that take advantage of their control of both the supply and demand side. We all know of institutions that provide housing subsidies for staff to live 20 miles away. They fail to see the demand side of their enterprise in a way that allows them to bring those institutional resources to work for the good of the neighborhood. But institutions in general do not look at themselves as real estate developers.

One of the things we did at Penn was to embrace our role as a real-estate developer. We owned 13 million square feet and had 50,000 people using the campus. The trick was to balance the supply and the demand to create sustainable community growth that would allow us to bring the students closer to campus. We added about 1,500 beds in about four years on campus, not through building dorms but through partnership with the private sector, building student market-rate housing. And that, with the help of incentives, allowed the housing stock around the campus that had been largely student rental properties owned by absentee landlords to convert to homeownership. We even got involved in buying then selling some of those older homes with a deed restriction to keep them owner-occupied.

Alison Pultinas: I was part of a group called Coalition to Limit University Expansion that was formed in 2004 mostly to deal with Northeastern's pending master plan. We received a grant to hire a planner to come up with an alternative master plan, and we presented it to neighborhood meetings in the Fenway and Mission





From the institutions' point of view, the edges of the neighborhood are barriers. So they build the equivalent of moats, which make things worse.
Steven Cecil FAIA, ASLA

Hill. I think it had some influence on the process if not the final outcome. One of the premises of the plan was that the edges of the campus had to be transition zones that could be permeated by the public, with uses like libraries, athletic facilities, and cultural facilities that would be shared by the public and the university. Dorms were a high-intensity use that had to be located in the center of the campus; the understanding was that they couldn't be on the edge because they had such a great impact on the adjacent neighborhood. Northeastern didn't follow that recommendation and is now building a 22-story dorm on the edge of its campus. And there tends to be an additional impact if you locate the dorms on the edge, which is that the campus automatically grows in that direction, like an amoeba. So the university is likely to purchase any adjacent parcels that might be available.

A related problem is the "company town" syndrome if the neighborhood retail district tends to be owned by the institutional entity, which is unhealthy. That was an issue in lower Roxbury, and is also the condition around Berklee and the Symphony on Huntington Avenue. The uses are controlled by the institution and the entire district can become very unstable because it is subject to expansion and conversion to institutional uses.

Kairos Shen: It's true that most institutions are landowners far beyond the boundaries of their actual campus. There's a great deal of land banking going on. When you think about how much land Harvard owns, and that approximately only a third of it is part of its new campus, the biggest question that the community has is, what is Harvard, whose core mission is not real estate development, going to do with it? What kind of leases will it give, and how will it accommodate the existing patterns of land use?

Rebecca Barnes: There's another way of approaching these issues. In Rhode Island, which is a state in extreme economic crisis, over the past year the universities and hospitals, government entities, and business community have joined together for the first time in a strategic effort to try to figure out how to strengthen the economy for the long-term. We had someone come up from the Research Triangle to talk to us about research in the university. He said that essential to the success of the region was the universities' understanding that part of their mission was economic development. This is a whole new concept for many universities and colleges. It may seem like common sense — and it is — but it is a paradigm shift for both institutions and the community, and it's going to be critical for many communities around this country as we try to come to grips with the global economic crisis. Understanding interdependency gives you a very different way of thinking about your organization and your community.

Kevin Carragee: One of the problems that we haven't addressed,

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which I suspect is still a problem however you reframe the dialogue, is the structural inequalities in the process. Neighborhoods are sitting down with institutions that completely outgun them in terms of resources. To see a master plan through the process requires a commitment from volunteers over a lengthy period of time, and attendance at meeting after meeting after meeting, at which the consultants from the institution sometimes outnumber the people representing the community. Moreover, the consultants bring their expertise and experience, and the community members are frequently untrained in the issues at hand. It's a heavy burden to place on a group of people who can be quite dedicated to what they're doing.

Elizabeth Padjen: Is there any way to correct that imbalance of resources? Are there any places that have come up with a solution where the communities have felt really well-supported? Or is it simply an unavoidable, systemic problem ?

Kairos Shen: In many cases, the communities don't believe that the city planning agency and development agency, such as the BRA [Boston Redevelopment Authority], are actually helping the neighborhood. But the truth of the matter is, that is our role. We serve as community resources. If the community members knew the kind of back and forth that goes on in many of the conversations when they're not in the room, I think they would perceive us differently. I'm not sure the belief that hiring some outside consultants to help the community, for instance, is the key to

> One of the greatest impediments to change is that the administrative structure of most institutions has never been designed to engage with the community. *Omar Blaik*

unlocking a better understanding of the issues. In general, I think that the public agencies do their job pretty well, but part of that job is to find solutions. That may mean in some cases that we are not as strong an advocate for certain community perspectives.

Steven Cecil: The way a project is first presented often creates a counter-productive dynamic: the community feels it deserves something, that it's owed something by the institution. The institution looks at that and says, "Hey, I give through my public relations outreach — we did those three barbecues." You're never going to win that conversation. You need to convert that conversation, to say, wait a second, we actually have common interests. If this isn't a great neighborhood, students aren't going to come to this college, or patients will go to another medical center. Similarly, if the institution isn't healthy or if it leaves, the neighborhood loses jobs and a certain level of community support. The trick is to find out where that commonality is and change the nature of the conversation.

Springfield College, for example, saw an amazing reversal. The college president came to neighborhood meetings, sat down, talked to people, and said, "OK, what are we going to do here? Crime's a big issue for you. It's a big issue for me. How are we

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going to solve this together?" The conversation about entitlement just never happened again. And that's the trick: the neighborhood dynamic has to shift a little bit, and so does the institutional. What the public agencies can do is help to bring about that shift.

David Spillane: Boston has one of the most proactive permitting processes for institutions anywhere in the country, where institutions have to come forward with a master plan that describes their known trajectory over a certain number of years, so people have a sense of what's coming. That's a process that neighborhoods in other parts of the country would very much like to have. It's not perfect, but it's a very valuable tool.

Rebecca Barnes: The three cities I've worked in — Seattle, Boston, and Providence — have all had institutional master plan [IMP] requirements. An IMP means that you have a mechanism for starting a managed dialogue.

Alison Pultinas: I don't think institutional master plans are a great success. It's a process for responding to a crisis, not for building good relationships.

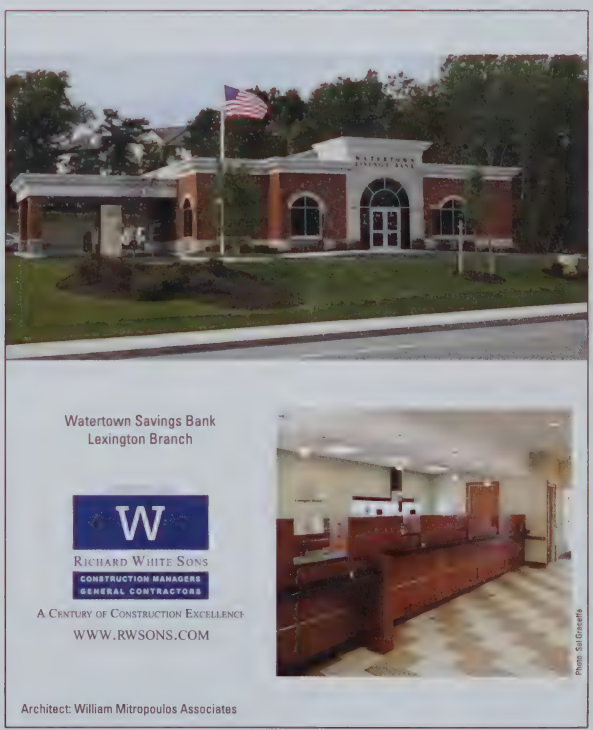
Elizabeth Padjen: How have they failed? What doesn't work?

Alison Pultinas: They oversimplify the relationships — the communities are the friction, but the BRA is the grease. And you only have a certain number of people in a community who are into going to that kind of zoning and planning meeting. And then, things change with amendments, and no one is the wiser. But more importantly, the IMP process is completely separate from the process of improving relationships between neighborhoods and institutions.

Steven Cecil: One problem of course is that even elected or appointed neighborhood representatives can't represent "the" community. That's the nature of a public process. The whole mechanism of the IMP isn't perfect, but having that public document interface where all of the issues get resolved is really a good beginning. And I think the IMP process will improve over time, because it allows all of the stakeholders to come together.

Omar Blaik: One of the greatest impediments to change is that the administrative structure of most institutions has never been designed to engage with the community in any sort of process. They need to restructure. It's one thing for many institutions to be aware of their role as an economic driver and want to engage with their communities. But even those that are trying to establish a dialogue frequently struggle. And I trace that back to the way they are structured; even their own internal departments don't talk to each other. It causes huge distrust. Institutions need to reorganize and establish departments of external affairs — their own State Departments — where all things that touch the neighborhood and touch the city come to one senior vice president. Until then, we will continue to have this distance between what institutions profess they want to do and what they actually do. ■





Hipsters in the Woods

The Midcentury-Modern Suburban Development

A half century ago,

by David Fixler FAIA

The housing boom that followed the Second World

War took many forms, but 15 years of depression followed by war created a widespread desire for new forms of community. In this country, the impulse to build in harmony with the progressive social, technical, and aesthetic promise of Modernism was coupled with the urge to find uniquely American expressions of the new spirit. The Modern Movement in America was never about the kind of collective housing estates that proliferated throughout Europe in the interwar and immediate postwar years. In the agrarian tradition that runs from Jefferson to Frank Lloyd Wright, Americans remained in many ways distrustful of cities and sought the ideal of a single-family house on one's own tract of land (however small). The notion of the Modern community first began to take shape in the Progressive era and is best illustrated in the English-style garden suburb developments of the 1920s and '30s (America's soft answer to the housing estates of Central Europe). By the postwar era, it had evolved to include a new model of the single-family house and its attendant community as an alternative to the ubiquitous suburban tract development that simultaneously arose to meet the tremendous demand for housing.

Modern neighborhoods are found throughout the United States, though they are concentrated on the east and west coasts. Although California has the largest of these with the vast developments undertaken by builder Joseph Eichler with architects such as A. Quincy Jones and Anshen and Allen, Massachusetts in fact has the richest and most diverse variety of Modern neighborhoods, some of which are the most architecturally influential and significant to be found anywhere in the world. These neighborhoods stood out in several ways. First, they were conceived as developments of *modern* houses: they look forward to the future without nostalgia or the desire to be seen as anything besides what they were — appropriate mid-20th-century responses to the challenge and exhilaration of living in the modern world. Second, they were consciously formed with community in mind, usually by members of the academic and research communities who were particularly enthusiastic about the possibilities that Modernism held for leveraging minimal means (these were small and very economically built houses) to enable a gracious, satisfying lifestyle. Most of the neighborhoods constructed communal facilities (some more elaborate than others) and established boards that set guidelines for the future development and maintenance of the neighborhood. These commitments fostered an identity and a sense of common purpose in the neighborhoods that have over time reinforced their unique character and contributed to their becoming some of the most stable communities in America.

Massachusetts is home to the first (and only prewar) Modern house neighborhoods in this country, of which the earliest and one of the most significant is Snake Hill in Belmont, developed by architect Carl Koch. *Progressive Architecture* noted in a 1945 article on the expansion of Snake Hill that the five original 1940 Snake Hill houses were "one of the best known and most significant groups of contemporary houses in the world," by virtue of their planning and architecture, and their success in creating a strong sense of community on what had previously been considered an unbuildable rocky hillside. Snake Hill was as innovative technically as it was in social terms; Koch experimented with new materials and construction techniques that enabled the houses to be built cheaply and quickly, without sacrificing aesthetics or the quality of the interior space. The steep road accessing Snake Hill was even fitted with radiant hot-water pipes to melt snow and ice. The enduring coherence of Snake Hill's identity is underscored by the relative obscurity of a contemporary development, undertaken by architect Gunnar Peterson in 1941 in Falmouth. This was unfortunately not conceived as a protected community, and has therefore had a considerable number of its houses replaced with mammoth contemporary structures that have severely compromised the character of the neighborhood.

The western suburbs — arcing out from an intellectual heart in Cambridge through Belmont, Lexington, Concord, Lincoln, and Weston — formed the locus of the Modern neighborhood. Each was a place that attracted progressive intellectuals, most of limited means, in search of space and good schools for growing families. A culture receptive to Modernism had already established itself in this area before the war: the first Modern houses in New England were the 1932 Eleanor Raymond House in Belmont, the 1933 Field House in Weston, and several houses including architect Henry Hoover's own house, in Lincoln — all prior to the arrival of Walter Gropius in 1938.

The explosion of Modern neighborhoods began after the war in 1948 with the construction of Six Moon Hill in Lexington by seven of the original partners in The Architects Collaborative (TAC). Intended to house their families and a group of friends in 28 houses on half-acre lots, the development arguably constitutes the gold standard for the Modern suburban neighborhood in terms of planning and architectural quality. The siting of these houses, integrated into a wooded landscape that is left as natural and undisturbed as possible, imparts a far more rural quality to the neighborhood than can found in other developments of comparable density.

By the time the wave of Modern development finally subsided in the 1960s, Lexington could count nine new Modern



young members of the creative class left the city in search of, yes, neighborhood.

Midcentury-Modern Neighborhoods in Greater Boston: Snake Hill, Belmont :: Conantum, Concord :: Nut Meadow Crossing, Concord ::

neighborhoods. The first of these was Five Fields, developed by the TAC partners as a speculative neighborhood almost simultaneously with their own houses at Moon Hill. As TAC and its work were largely seen as a product of Harvard under Gropius, the MIT response soon followed. The Peacock Farms community was developed and designed by MIT-trained Danforth Compton and Walter Pierce FAIA in 1952. White & Green were brought in as builders in 1955, and the development eventually grew into a community of 68 households with an elected board of directors, common land, and deeded design controls.

Carl Koch was also behind the development of Kendal Common in Weston, also founded in 1948 by a group of Cambridge-based young married academics and scientists who, in the words of Weston historian Pamela Fox, "shared a common vision…were ready to experiment with new architectural concepts…were environmentally conscious…[and] above all wanted to create a sense of community." Advertising brochures created to promote the development to a wider audience promised "Land and an Idea, Community and Modern Architecture," with notions of "an adventure in living…building towards a better life…modern homes with all their freedom and color and sun…among neighborly people who appreciate the advantages of doing things together." Prospective owners at Kendal Common were given a list of architects who were prequalified to design houses in the neighborhood, and were subsequently encouraged to find ways to participate in the activities of the community — they even helped each other on the construction of their houses in the time-honored barn-raising

^ Conantum Harvest Supper, September 1959. Photo courtesy Concord Free Public Library.

These neighborhoods remind us that Modernism still has much to teach us.

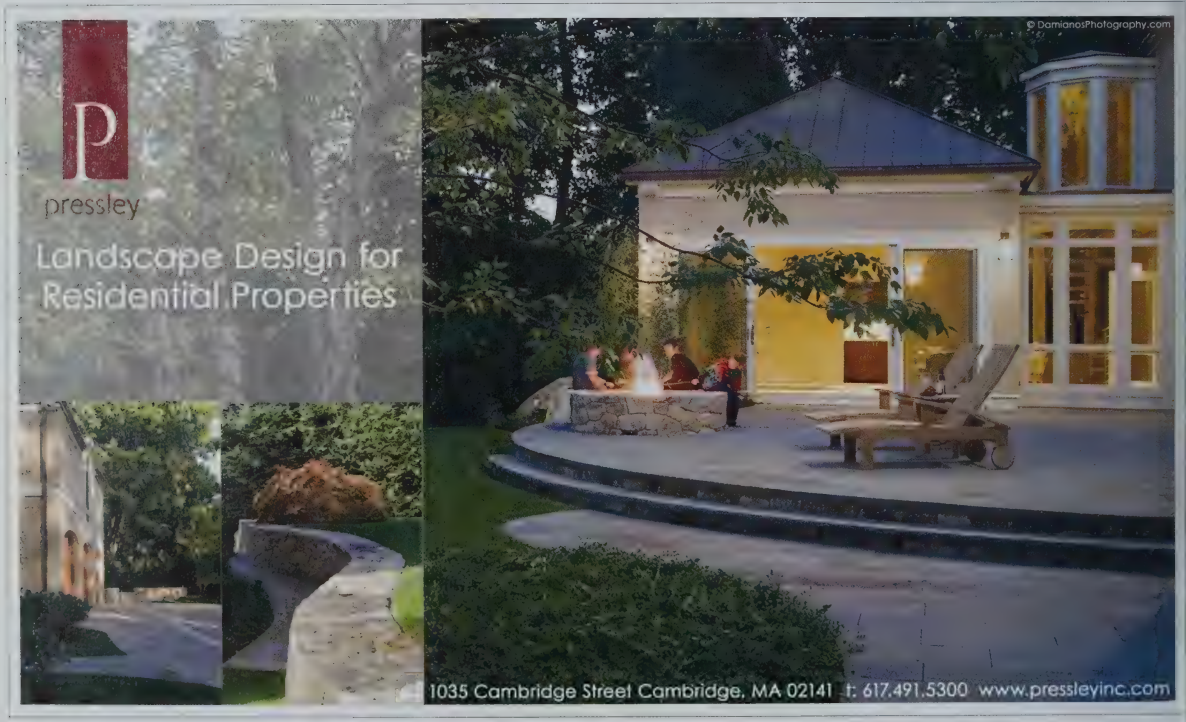
tradition. The houses at Kendal Common were thus designed by a consortium of the best young architects in the area at the time including Koch, Robert Woods Kennedy, Walter Bogner, Hugh Stubbins, Carleton Richmond, and TAC.

Koch was also the architect for a second development in Weston at Spruce Hill, which features a number of his Techbuilt experimental houses. However Spruce Hill, like Peterson's development in Falmouth, was not a chartered community and it has also been prey to rapacious overdevelopment that has just within the last five years effectively compromised the simple, bucolic character of the neighborhood.

Lincoln has become much more famous for its individual Modern houses, but even the Gropius House is part of what might loosely be termed the first Modern neighborhood (though not an intentional development) with the houses that Marcel Breuer and Walter Bogner constructed for themselves between 1939 and 1941 on Wood's End Road. Brown's Wood in Lincoln, however, was founded as another response to the early Harvard-centric TAC-based developments by a group of MIT professors who created a highly successful and architecturally eclectic mix of 22 houses (this seems to be a charmed number for these neighborhoods, as it is the same as Kendal Common), including a very early version of a passive solar trombe-wall house. In reinforcing the quality of life that this community has developed, Ruth Wales, a founding member and the historical conscience of the neighborhood, notes that in her first 45 years at Brown's Wood, all of her neighbors, once settled, stayed put.

The largest local Modern house development — and the one that perhaps more closely resembles its counterparts such as Arapaho Acres in Denver and the Eichler developments in California — is Conantum in Concord. The brainchild of MIT professor W. Rupert McLaurin and the ever-present Carl Koch, Conantum has 100 houses on 190 acres, 60 acres of which are held in trust as common land. Designed specifically with the preservation of a sizable wetland in mind, Conantum takes the name given to the Kalmia Woods area by Henry David Thoreau in honor of Ebenezer Conant. This nod to the enlightened thinkers who fostered appreciation of this land was reinforced with the establishment of an anti-discrimination statute in its 1951 by-laws, one of the first of its kind in the country. Conantum also provided Koch with the opportunity to further develop his building technology systems — which went on to

:: Five Fields, Lexington :: Peacock Farms, Lexington :: Six Moon Hill, Lexington :: Turning Mill, Lexington :: Brown's Wood, Lincoln



become Techbuilt, which later merged with similar early efforts, becoming the Deck House system that was developed for use on a large scale.

These communities and their houses have renewed relevance in our present circumstances. They embody the American dream of a commodious single-family home in a supportive community without material excess and in maximum harmony with its environment — a minimal touch on the land. It is rare to find a house in these early developments that originally exceeded 2,000 square feet in size (many are closer to 1,000 square feet), and yet most if not all of these houses — even those that have not been expanded — feel airy and commodious, not small or constrained. They also serve to remind us that Modernism still has much to teach us. Ironically, the failures of Modernism are sometimes attributed to a loss of sensitivity to scale in later large-scale urban development, but it is precisely the mastery of human scale — a sensitivity that has been completely absent from the outsized, neo-traditional homes that have taken over our suburbs — that is the key to the magic and success of these developments. Driven by disgust and exhaustion in contemplating the excess of the last two decades, as well as economic need, more people are discovering the full panoply of values that are inherent in these neighborhoods. And to my sons, and many of their generation, they're just cool. ■



:: Wood's End, Lincoln :: Valley Spring, Newton :: Kendal Common, Weston :: Spruce Hill, Weston

David Fixler FAIA is a principal of Einhorn Yaffee Prescott in Boston, president of the New England chapter of DOCOMOMO (an international organization promoting the documentation and conservation of Modern Movement buildings and sites), and co-chair of the Association of Preservation Technology (APT) Technical Committee on Modern Heritage.

^ **Peacock Farms, Lexington, Massachusetts. Photo by Walter S. Pierce FAIA.**



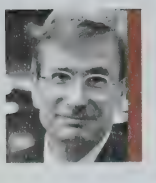
Street Smarts

Designers think about architectural structures. But they also need to think about social structures.

Robert J. Sampson talks with **Jeff Stein AIA**



Robert J. Sampson is the Henry Ford II Professor of the Social Sciences and chair of the department of sociology at Harvard University, where his research focuses on the social organization of cities. Previously a longtime member of the sociology faculty at the University of Chicago, he serves as the science director of the groundbreaking Project on Human Development in Chicago Neighborhoods (www.icpsr.umich.edu/PHDCN).



Jeff Stein AIA is head of the School of Architecture and dean of the Boston Architectural College and is the architecture critic for *Banker & Tradesman*.

Jeff Stein: People often refer to the Chicago school of economics, the school of thought that was launched at the University of Chicago in the 1950s and, similarly, there was a Chicago school of architecture at the turn of the 20th century, which included designers such as Sullivan, Adler, Burnham, and Root. It turns out there's a Chicago school of sociology, too, and you are considered to be one of its leading exponents. Is Chicago the birthplace of the idea of looking at the social ecology of cities, looking at entire communities rather than just individuals?

Robert Sampson: Yes. The Chicago school was first formed by thinkers who were interested in the study of the city — how a city develops and changes, the social dynamics of the neighborhoods — a field of study that is now known as urban sociology. It flourished in the early part of the 20th century, during an era of increased immigration to the United States, when cities like Chicago were rapidly exploding in population. The Chicago sociologists were interested in human ecology and social ecology, as well as the notion of the neighborhood as part of a larger system, much like an ecosystem. They borrowed from biology to try to understand processes in the city. So, for example, they probed the notion of invasion and succession: the idea that certain immigrant groups would "invade" a neighborhood, take over, succeed, then pass on.

Jeff Stein: Beyond just borrowing the language from biology, did they really consider the city to be a kind of organism?

Robert Sampson: They did, actually — a social organism. They extended the metaphor to notions of competition and survival. More significant, though, was their focus on the social structure of the city and the ways in which various neighborhoods grow, change, and evolve.

Jeff Stein: When you say "social structure of the city," what do you mean?

Robert Sampson: It's a bit of jargon, I suppose, but it refers to the nature of the relationships among individuals and also across the various neighborhoods of the city. There's something about city life, about the nature of interactions among human beings, that creates a social property that is different from the property of the individual. That would include the social cohesion of a community



Sampson portrait by Tony Rinaldo.
Street scenes by Alex Budnitz.



or a society or any entity that is larger than the individual. We can also think about it in terms of the nature of ties, the ways in which people know one another or are able to go to someone to get something done. In general, sociologists view the nature of ties between people as a fundamental feature of the discipline.

Jeff Stein: Frank Lloyd Wright talked about architecture as the mother of all the arts, by which he meant, without architecture to create the space for ties to happen, the relationships don't happen. Is there a relationship between what architects do and their ability to create neighborhood space or social space? We claim that there is, but we don't have science to back us up.

Robert Sampson: Architecture plays a role in the history of thinking about cities, but I would view it as one that's more indirect if you think of cities as social structures. I'm not an architectural determinist by any means, but I do think that architecture matters in a number of ways. The primary way is how the design of cities and the architecture of physical spaces bring people together — or not.

One way of getting into this is to examine Oscar Newman's idea of "defensible space" that was dominant for a while in the 1970s. He believed that our patterns of interaction are dependent on how buildings are set, and whether or not the resulting sightlines allow us to observe in a natural way. For example, he talked about housing projects where mothers who were unable to directly observe their kids playing in the street would be less likely to control them.

Jeff Stein: Which we later imagined was the trouble with high-rise housing.

Robert Sampson: Exactly. I think Newman took it too far. He's been criticized for being an architectural determinist, perhaps because he focused too much on the notion of surveillance and the assumption that if you couldn't see specific behavior, then you would be less likely to be involved. He made other assumptions about high-rises — that you wouldn't know your neighbors, for example. That way of thinking fell out of favor. Clearly we have many dense, high-rise, urban environments around the world that are quite safe.

Jeff Stein: And there are plenty of sparsely populated suburban environments that are unsafe.

Robert Sampson: Absolutely. In fact, in Chicago, density is inversely related to violence. But that doesn't mean that the design of space is unimportant. Behavioral studies have shown that the design of some environments can bring together the various actors that, let's say, facilitate crime. There are, for example, predatory relationships that may be facilitated by the design and siting of public transportation. That's a somewhat more complex variant on Newman.

Jeff Stein: Can a sense of ownership of a space contribute to its social success, whatever its design might be?

Robert Sampson: Yes. In fact, one of the more influential articles in urban sociology was based on a study here in Boston that made the

connection of cultural identity with a community's use value. And I've been studying the related notion of cultural aspects of space and identity and how they affect the ways people relate to certain spaces.

Urban sociologists try to understand how places take on reputations. Why, for example, do people perceive some places to be more disorderly than others? Why do some places attract graffiti, defacement of public property, groups of kids hanging out? I think that understanding the physical aspects of disorder is a key to understanding cities. The "broken-windows theory," for example, is about physical disorder and what that means to people.

Jeff Stein: What it means for some people, apparently, is that those who live in that neighborhood don't really care that much. That one broken window leads to another, that one outbreak of graffiti leads to more graffiti. And if you're predatory, it means that you can commit acts of violence there and nothing will happen.

Robert Sampson: Right — that's the theory. I think it happens to be wrong for the most part. It's not that the theory is off base in pointing out the importance of these cues, because after all, we do see them. The interesting thing about crime is that we don't usually see it. It's hidden. We hear about it, but often indirectly, maybe through newspaper reports. But the physical signs of disorder are something people can see. The trick from the perspective of a social scientist is to try to understand the meanings that people attach to that disorder. It turns out that they're highly variable. How people interpret disorder is dependent on other characteristics of the environment.

Jeff Stein: And in fact you've conducted a significant study of neighborhoods and human development in Chicago that addresses these issues.

Robert Sampson: It was an enormous effort including colleagues at other universities, full-time research directors, IT people, interviewers — we employed about 150 people and interviewed thousands of people over seven years from the mid-'90s until 2002. We started just as the juvenile violence rate in American cities was hitting its peak, and there was a lot of concern about crime.

Jeff Stein: And then crime in America went down by a quarter over the decade.

Robert Sampson: Right. And the debate about that still rages. One hypothesis is that policing helped — the Giuliani initiative in New York City in response to the broken-windows theory is probably the most famous example. I think that's correct, that policing was part of it.

Jeff Stein: A lot of people think it had to do with the birth rate — the number of juveniles, who presumably are more likely to commit crimes, peaked in the early '90s.

Robert Sampson: Age composition is the basis of a longstanding hypothesis about the crime rate. But it turns out that the two recent periods of high crime — the mid-1960s to the '70s, and the late '80s to the '90s — can't really be explained by age. I think the major contenders for an explanation of the drop in the '90s are the



There's nothing so useful as a good idea and good facts. The job of the social scientist is not to make policy, and perhaps not even to recommend policy, but to provide the knowledge base that policymakers can draw upon.
Robert Sampson

increasing incarceration rate, policing, the growth of community intervention through community organizations, the revitalization of many cities, and immigration.

Jeff Stein: One of your papers points out that neighborhoods that attract immigrants tend to be safer neighborhoods.

Robert Sampson: It's a bit counterintuitive, especially given people's biases and the way that the media have often reported things. People are more likely to perceive disorder in neighborhoods with a large immigrant or minority population. In our Chicago study, we were able to determine perceived versus actual disorder through direct observation — video cameras and observer logs coding everything from condoms in the street to evidence of drug use, types of graffiti, and broken windows. We coded land uses as well — for example, single-family and multi-unit housing, stores, and bars.

Then we looked at how those factors correlated with crime and people's perceptions. That's where we came to two significant conclusions: first, that the observed level of disorder as traditionally defined by the broken-windows theory was not really the major predictor of crime. And second, that people's perceptions of disorder depended less on the actual amount of disorder in the neighborhood and more on the population composition, in terms of immigration and minority status.

That makes the puzzle even deeper, because people are perceiving more crime and disorder where there's more concentration of immigrant groups. But the data show that, over time, crime was declining as immigration was increasing. The research suggests, in general, that first-generation immigrants, those born outside the US, have lower rates of violence. We demonstrated that in Chicago. We've also shown that neighborhoods with high concentrations of first-generation immigrants are also related to lower rates of violence. So as we see increasing diversity and immigration in many US cities, we are, for the most part, seeing decreasing crime rates. By the way, it was also true that first-generation immigrants in the earlier waves of immigration had lower rates of violence. But those periods coincided with vast social change in terms of urbanization and industrialization, so the social equilibrium of the community was disrupted.

Jeff Stein: When you find this kind of information, real data based on observations and interviews, then what? You approach this as a social scientist, presumably without an agenda; you're simply uncovering facts. But the information that you develop could lend itself to underwriting government policies. How does your work get translated into policy?

Robert Sampson: The translation of research into policy is a very complex issue, especially for controversial issues like crime or immigration. It often seems that people think they know the answers already. And policy is interpreted in ways that serve interests. I'm motivated by the notion that there's nothing so useful as a good idea and good facts. So while I don't start with any particular agenda, I always try to rewrite our findings in a way that is interpretable by a more general audience. The job of the social scientist is not to make policy, and perhaps not even to recommend policy, but to provide the knowledge base that policymakers can draw upon.

Jeff Stein: Housing would seem to be one area where more science could produce better policy, or a better understanding of policies that we already have. Mixed-income housing is one example. Tent City, in Boston's South End, was among the first projects in Boston that intentionally sought residents with mixed backgrounds. A quarter of the units are at market-rate rents, half at middle-income subsidized rates, and a quarter at low-income subsidized rates. It seems to works pretty well, too; before it opened, there was a waiting list of 2,000 families for 370 units.

Robert Sampson: Boston has a number of examples of successful mixed-income projects. But Boston, like New York, never had the level of extreme segregation by class — or race — that, say, Chicago had. In many places, the mixed-income policy seems to be working, although it's still controversial in some communities. Clearly there's a demand for it: you're seeing that in the waiting lists and in the market-rate units that are being snapped up.

The jury is still out in terms of why it works. One possible mechanism has to do with middle-class residents bringing certain kinds of resources — financial and attitudinal — to either the housing project or the neighborhood: when something is wrong with the school or neighborhood, they have more experience in being able to get social action to fix it. Another possible mechanism is the interactions between lower-income and middle-income residents: through these interactions, the poorer folks will learn, get job information, skills, and improve their lives.

My read of the data is that it's not so much the social interaction between residents that makes things work, but the improvement in the overall resource base of the neighborhood. And undoubtedly some of the success of these projects relates to another broader factor, which is that many of the healthier cities in the US are dominated by what some have called the "creative class" — people who value cultural amenities and a certain kind of dynamic mixing, who favor heterogeneity over homogeneity.

Jeff Stein: You have written that you don't necessarily think that a neighborhood is a primary group that needs to have face-to-face, intimate relationships.

Robert Sampson: That's right. It has to do with the very definition of a neighborhood. Many people think that neighborhoods are less important than they used to be. If you define a neighborhood in terms of primary group relationships — that probably mythic notion of a place where people knew their neighbors intimately and had dinner with them regularly — then indeed they have declined over time. The data seem to bear that out. People are less

likely to know their neighbors. On the other hand, if you define a neighborhood in terms of the sense of identity and the meanings that people attach to places, which lead to all kinds of self-sorting, then you find that people think of neighborhoods much as they always have.

Jeff Stein: But they can live comfortably with a sort of psychological distance.

Robert Sampson: Exactly. People want to live in environments that they perceive as safe, as cohesive, as having certain kinds of amenities. That is not the same as having a deep, intimate, personal tie with your neighbors. One of the things we've tried to do is to study how contemporary urbanites create certain kinds of social spaces and neighborhoods. Our argument, in part, is that the collective identity of the neighborhood and what we call the "collective efficacy," which refers to social control and the ability to get things done, are important and vary across neighborhoods. But that's not the same as having close social ties.

I can give you a concrete example — Boston's North End in the early 1900s, an Italian immigrant neighborhood with lots of family and inter-generational ties. That kind of density of friend and kinship ties is not the same thing as public social control in the sense of bringing outside resources to the community and promoting the well-being of its youth (especially the second generation), one of the central ideas behind collective efficacy. Neighborhoods have changed in what they provide people. They don't provide personal ties as perhaps they once did, but they do provide an important social environment in which people are raising their kids. And certain core features of neighborhoods that have always been important, like safety and trustworthiness, are highly valued by residents. The trick is to achieve those in the modern world.

There are lots of paradoxes involved in this. For example, you might think that people who use the Internet would be least likely to identify with the neighborhood or be involved in local organizations. And that's not necessarily true. It turns out those who are more likely to be involved in the neighborhood are also involved in a range of ways, including using the Internet for local community purposes. So we're seeing what are called e-neighbors — e-mail groups and listservs that revolve around public aspects of the neighborhood, such as a park or a new development or a crime problem, where people connect through technology to achieve a certain outcome.

Jeff Stein: How does that relate to what we term community? There's a nostalgic lament for the loss of community over the last generation or so. Architects respond by trying to create community space that will foster a sense of community. Yet it's not clear that we know what we're talking about when we say that.

Robert Sampson: There are all kinds of communities. Community typically means shared values. What do I mean by shared values? Well, in the modern world, a neighborhood can have lots of heterogeneity in its values. On the other hand, the data suggest that there is a strong demand for shared values on certain aspects: safety, for example, and certain qualities of the environment. The

There are all kinds of communities; in the modern world, a neighborhood can have lots of heterogeneity in its values. *Robert Sampson*

notion of shared community has to do less with a personal aspect and more with organizations providing the kinds of social and public goods that people can agree upon.

Architects would be wise to focus on designing spaces that provide these kinds of opportunities. Simple things, like the design of parks where people can interact in a way that's safe. It seems like a trivial example, but the town of Brookline has dog parks where in the evening I see lots of people with their dogs, standing around talking for quite a long period of time. These are public spaces. People get to know one another. Then they go back into their world. In a way, that's a community, but it's intersecting with public space. If you layer that through a number of different dimensions of social life, you have a very livable, very desirable, urban environment.

Jeff Stein: Is that the sort of casual meeting that turns into civic engagement? I'm thinking of the economist Albert Hirschman who wrote in 1970 about the options people have in their institutions: exit, loyalty, or voice. I suspect those options apply to community, too.

Robert Sampson: Voice means getting involved and having a stake in the community, trying to change it if things go wrong. Let's go back to the notion of the broken windows. Several years ago, I went out one morning and noticed graffiti that had been spray-painted along the side of an apartment building visible from my house. I have to admit I was at first angry, because the space had been defaced. Now, if the broken-windows theory is right, I could have viewed that in a number of different ways — I could have, for example, seen it as a sign of decline and moved away. In that particular case, I told the authorities about it, as did others. It was cleaned up. A month later, it appeared again. This happened three or four times. But each time, residents either cleaned it up or engaged in some sort of collective action to make sure it went away, and it hasn't reappeared. That's an example of "voice," in the sense of taking action.

Over time, if people give up on a place, they exercise the "exit" option and they leave. Sometimes people are stuck in communities. My colleague Bill Wilson has written about "defended neighborhoods," which are an example of Hirschman's third option — the sense of loyalty that develops when people feel their neighborhood is under siege. That sometimes has a negative side which is seen in some mixed-income neighborhoods or in areas that are undergoing racial transition, where the residents band together against newcomers. We often forget that neighborhoods are always changing. Our data in Chicago showed that something like 40 to 50 percent of the people are moving.

Jeff Stein: I have seen a map that shows an astonishing amount of movement among black households in Chicago versus very little among white households.

Robert Sampson: What's happening in Chicago, but also in many other places, is that there is a lot of movement, but there's a lot of reproduction of inequality. A recent government initiative called Moving to Opportunity gave people vouchers to move out of bad neighborhoods.

Jeff Stein: Sort of a more humane version of urban renewal.

Robert Sampson: Yes. Let's move the individual instead of changing the environment. What happened, though, was that most people moved to areas that were slightly better off. It was a difference of degree, not a difference of kind. Moreover, after a while, many people moved to neighborhoods just like the ones they had come from. At the end of our study, we found that people were still living in fairly poor neighborhoods, and there was still a high degree of segregation — blacks were moving to either predominantly black or mixed neighborhoods. Whites behave similarly. So people end up in the same place, even though they're moving. It's the paradox of the stability of change. That has important implications for policy. If instead of trying to improve neighborhood environments through mixed-income housing and other community-level interventions, we took this kind of policy of moving individuals to a larger scale, then we'd have massive change, which would then lead other people to change their behavior in ways that are possibly negative. We're actually seeing that now. In Chicago, where Robert Taylor Homes was torn down, 26,000 poor and vulnerable residents have been dispersed throughout the city. The residents in some of the neighborhoods that are receiving those people then start to think, well, this is where the poor are moving to, and the future of the neighborhood doesn't look bright, so I'll leave.

Jeff Stein: Have you done any cross-disciplinary work with architecture schools, to help architects understand the social context in which they're working?

Robert Sampson: I have had some interactions, but not as many as I would like. My sense is that there is an increasing recognition that the traditional structure of the academy is highly arbitrary. We've been set up as departments, but knowledge is progressing in an interdisciplinary way.

So, don't start with a discipline, start with a problem. If we're talking about something like the future of cities, then you've got the environment. You've got buildings. You've got social interaction. The broadest way to think about it is the study of urban change.

Jeff Stein: In the midst of the current financial crisis, does a discipline like sociology become marginalized as policymakers focus on the economy?

Robert Sampson: In a way, our position may even be enhanced. The importance of social relationships never goes away and they become even more critical in a time of economic downturn. Collective action, addressing social problems, and the cohesiveness of social environments have never been more important. ■



The Once and Future Neighborhood

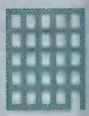
Clues to the neighborhoods of the future lie in our past.

BY **BRENT D. RYAN**



OF ALL THE PARTS OF THE CONTEMPORARY CITYSCAPE, the neighborhood is perhaps the most sacrosanct as well as the most challenging feature for the designer. Though neighborhoods are almost everywhere, they are notoriously difficult to define, never mind design from scratch. Nor are they the same for all people: one person's neighborhood may or may not be another's, depending on lifestyle, abilities, age, income level, or interests. Yet certain physical features such as boundaries, centers, and districts still retain their definitional power. Everyone recognizes a small, friendly park surrounded by houses as a neighborhood space, and a corner store is a neighborhood place whether it is isolated in a neotraditional subdivision or nestled in the urban grid.

Where neighborhoods do not exist, we inevitably create them, for they are a fundamental part of our psyche. Just as we feel the need to belong to a social unit of some sort, we also feel the need to belong to a part of the built landscape, no matter what the form of the community we live in. Neighborhoods do not require distinctive topography, nor architectural definition: sociologists pioneered the concept of the community area in 1920s Chicago, a "city of neighborhoods" that is largely an unvarying grid of small houses where residents feel a fierce attachment to their local piece of the urban fabric. Though we may view neighborhoods today in a nostalgic light, they did not vanish with the coming of the suburb: former urban residents promptly formed attachments to their local subdivision after they had relocated from the city, as sociologist William Whyte documented in the 1950s. Suburban commercial strips, garish and traffic-filled, were harder to love, so place attachment instead centered on the home, which had grown correspondingly more spacious and comfortable in suburbia.



Designers' efforts to fix the form of the neighborhood in place have proved problematic. Planners' efforts to rationalize and diagram neighborhood form were never successful: architect Clarence Perry's "neighborhood units," designed in 1929, projected that people could happily spend their non-working hours in a community of 160 acres and approximately 5,000 people, centered around a local school and church and separated from other neighborhood units by wide automobile arterials. This vision, derived in no small part from a romantic view of the medieval village, assumed that most activities and tastes could be satisfied at the village scale. This fiction of command, control, and limited choice has never been satisfied in reality except in what sociologist Irving Hoffman called "total institutions": asylums, prisons, college campuses, and the like.

Not surprisingly, suburban developers and towns never adopted the neighborhood unit except in the most reductive sense. This neat concept of the self-contained neighborhood, surrounded by open space and presumably filled with civic institutions and mutually supportive citizens, proved expensive to construct and perhaps never should have been



attempted, for neighborhoods are as much a social as they are a physical construct. One neighborhood size certainly does not fit all, except where populations are perhaps overly homogenous, as in distant suburbs or disinvested urban areas. The few completed 1960s "new-towns in town," with their pizza parlors, laundromats, and schools constructed according to planning algorithms, represented a sad Modernist mockery of the processes that had shaped actual urban neighborhoods.

The future of the neighborhood lies not in rigid planning or design measures but in our shifting conceptions of ourselves, the technological changes that permit ever greater mobility, and lifestyle and environmental changes that are difficult to predict. Each of these is gradually encouraging different settlement patterns, and many of these shifts will act in concert to produce neighborhoods that will be denser, more physically and socially heterogenous, and greater in scale than ever before. Within this shifting settlement pattern will arise a variety of new building types to accommodate the demands of the emerging American population. Each of these new community models will generate new social proximities and groupings that in turn will form the future neighborhoods of cities and suburbs.

Many of the new 21st-century neighborhoods will be those districts in which the distinction between living area and shopping area, first seen in the early 20th century, breaks down. The homogeneity of suburbia has made the shop seem increasingly attractive as an activity generator, and "mixed-use" has consequently become a marketing distinction. As a result, new shopping districts across the country are being built with apartments above, either in outdoor mall-type developments ("lifestyle centers"), or in small, formerly entirely commercial downtowns. Such condominiums are proving increasingly attractive to wealthy older households seeking more manageable living quarters, proximity to commuter rail stations, or simply someplace to walk for a cup of coffee. The design of these new mixed-use neighborhoods is generally conservative, fitting the tastes of their residents.

Other new mixed-use neighborhoods will coalesce in the underused areas in and near downtown. Larger cities have also proven remarkably successful at attracting the "creative class." Many of these individuals reject the concept of the single-family detached home. To accommodate them, obsolete industrial or downtown office buildings have been converted, many as "live-work" spaces that are intended to support home enterprises. Most critical for these households are a distinct, alternative sense of place and design; a mix of activities nearby, not all of which have to be salubrious; and a feeling of shared community, even if residents are busy professionals who spend little time "neighboring" with their fellow members of the creative class. Where old buildings are not available, new ones are constructed, often as "lofts" with higher-than-usual ceilings if not bare concrete walls. Such "creative communities" have enlivened fringe-of-downtown neighborhoods in Los Angeles, Chicago, Houston, and almost every mid-size city in between. Examples in Boston include the Fort Point Channel district, and buildings such as Channel Center and the South End's Laconia Lofts.

The growth of lifestyle centers and creative communities has not stopped the relentless development of agricultural land at the fringe, or prevented the continuing decline of older, poorer, out-of-fashion urban neighborhoods farther from downtown. These older trends will continue, but each offers the opportunity for larger-scale planned new communities that question the conventional suburb and the older, often monotonous urban grid with new open spaces, activities, and housing forms. New Urbanists have been the most aggressive in colonizing these spaces with neotraditional "villages" based in large part on the neighborhood unit, but other opportunities await creative planners, municipal officials, and developers willing to take formal and programmatic risks with redevelopment. Urban fringes and inner cities, given up for dead but in reality bubbling with activity, represent a true frontier for innovative neighborhood design.

Another frontier for innovation is the most basic neighborhood component of all, the single-family home or apartment unit. Historian Dolores Hayden has carefully documented how industrialization and new conceptions of women's rights in the early 20th century promoted a flurry of centralized housing complexes intended to ease women's household burdens and to promote a new communal ethic based on shared cooking and laundry duties. Such efforts were discouraged by the emerging real estate and appliance industry,

Just as we feel the need to belong to a social unit of some sort, we also feel the need to belong to a part of the built landscape.

which promoted individual consumption instead of collective ownership, consigning mass construction of alternative housing formats to the dustheap of history. Yet the ideal of a collective settlement pattern has persisted, reinforced not only by disillusionment with the suburb, but also by the very real logistical difficulties of childcare, transport, and social activity in two-career households.

Communities with collective social and kitchen space, called cohousing, today represent a tiny minority of residential construction, yet they also offer perhaps the clearest sign that renewing the concept of the neighborhood has less to do with its stylistic or locational characteristics than a reimagined understanding of the interaction between society and space. If the 20th century was the era of mass production, perhaps the 21st can offer the reemergence of truly differentiated development, with a range of neighborhoods providing a variety of sociospatial amenities in a correspondingly wide range of design and planning forms. In order for this true reimagination of the neighborhood to occur, developers, municipalities, planners, and designers will all have to join hands to permit or even encourage experimentation. Much of this innovation will occur, as in the past, in usable, somewhat marginal communities offering cheap space and underused amenities — the very neighborhoods celebrated by Jane Jacobs 50 years ago.

Mixed uses, collective facilities, and convenient urban locations may be increasingly preferred lifestyle options for the upper-middle class, but they are essential components of economic wellbeing for those populations lower down on the economic ladder. It is easy to forget that the bucolic, detached single-family home was largely a "bourgeois utopia," as historian Robert Fishman termed it. The design of such dwellings presumed that their inhabitants had the leisure and capital to live elsewhere, and planning regulations reinforced this dictate by forbidding economic activity in the home. The sylvan vision of the suburb obscured the reality and desirability of homes that provided more than a retreat for a prosperous nuclear family, and suppressed the equally compelling histories of alternative housing models that had provided accessory units, flexible commercial space, and outdoor workspace. Such alternative models, designed to provide





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increased economic stability for working-class households, many of them minority, have begun to reappear, particularly on the west coast where programmatically innovative architects such as Michael Pyatok, Daniel Solomon, and Teddy Cruz have designed what Pyatok calls "entrepreneurial housing" in cities like Oakland and San Diego.

Ideally, the 21st century will offer not only the increased range of new neighborhood concepts, but also an increase in the range of mobility options to reach them and in the economic ability to afford them. Many of the new metropolitan and architectural structures of the 20th century excluded the range of populations that had inhabited the much more pluralistic 19th-century city. All of us should strive to ensure that the future city is not only more formally diverse but also more socially equitable, environmentally sustainable, and visually compelling than the places that preceded it. ■





Brent D. Ryan PhD is an assistant professor of urban planning at the Harvard Graduate School of Design.



outside

The Neighborhood Murals of Boston and Cambridge

Outsize and outside, city murals offer a glimpse of life inside the neighborhoods.

Robert Frost had it wrong: Something there is that does love a wall. From cave paintings to pharaonic tombs and Renaissance frescoes, the history of art amply documents the human urge to ornament large vertical surfaces.

Most murals, however, are not mere decoration. They transcend genres as a unique narrative form, telling stories through images with a freedom not available to later media such as photography and film. The muralist can juxtapose images and ideas without the spatial limitations of photography or the chronological constraints of film. This fluidity makes the mural much more akin to today's new-media art forms than its often representational language would suggest.

With the international influence of the Mexican muralist movement of the early 20th century, led by painters such as Diego Rivera, José Clemente Orozco, and David Alfaro Siqueiros, murals became more overtly populist and political. Closely associated with Social Realism and promoted through the Works Progress Administration, muralism reached its zenith in this country in the 1930s and '40s, declining in the postwar era until the last quarter of the 20th century, when the genre re-emerged in two very different forms: the trompe-l'oeil, most notably by artist Richard Haas, and the vibrant neighborhood murals that recall the populism of the Social Realists without their explicit politics.

Many visitors to Boston are familiar with Richard Haas's 1977 Boston Architectural College mural or with Joshua Winer's 1991 Café DuBarry mural on Newbury Street. But these are only two pieces in a remarkably large collection. Boston and Cambridge have been home to a lively mural scene that has paralleled the growth of public-art programs and neighborhood political empowerment. Although sometimes commissioned by businesses or individuals, murals in these cities have found their strongest champions in the Cambridge Arts Council and in the Boston Mayor's Mural Crew, which recruits teen workers to assist in painting and installation. The combination of local participation and images incorporating neighborhood histories and portraits of residents creates art that is a powerful statement of neighborhood identity and pride.

— Elizabeth S. Padjen FAIA







by **David Fichter** title **The Potluck: Area 4 Community Mural**
location **Harvest Food Co-op, intersection of Bishop Allen Drive and Norfolk Street, Cambridge**
This 22-by-100-foot mural, completed in 1994 and sponsored by the Area 4 Neighborhood Coalition, is a portrait of a multi-ethnic neighborhood. It was painted with the assistance of paid students and community volunteers. Photos courtesy the artist.

by **Wen-Ti Tsen and David Fichter**
title **Unity/Community: The Chinatown Mural Project**
location **Parcel C, 38 Oak Street, Boston** (demolished)
This 40-by-30-foot mural was designed and painted with the assistance of community volunteers. Following its demolition in 2002 due to new construction, a replica was installed in the lobby of the Boston Chinatown Neighborhood Center at 38 Ash Street. Photo courtesy David Fichter. (For a history of the mural, including its symbolism: http://bostonchinatowngateway.com/archives/380).

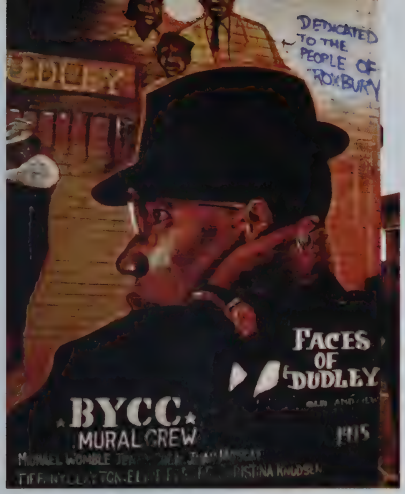


by **Daniel Galvez** title **Crosswinds**
location **Middle East Restaurant, 472 Massachusetts Avenue, Cambridge**
Combining portraits of local residents with patterns and objects from the world's cultures, *Crosswinds*, painted in 1992, is the companion piece to *Crossroads* (1986), located a few blocks away on Pearl Street. For both murals, Galvez relied on the community for ideas, including images from local photographer Jeff Dunn. Photo courtesy the Cambridge Arts Council.


團結
互助
JUS FOR ASIAN'S
Công Lý Cho Người Á Châu
HOUSING!



by **John Ewing** title **untitled** location **James Michael Curley Elementary School, Jamaica Plain**
Commissioned by the Parents Committee for a wall near the school's entrance (see inset, before mural), the mural was completed in 2002. Photos courtesy the artist.





by The City of Boston Mayor's Mural Crew
title Faces of Dudley
location 2387 Washington Street at Malcolm X Boulevard, Roxbury

Completed in 1995, this mural features portraits of residents of the Dudley Square neighborhood, including Malcolm X. Photos: (detail) by Liz Kelleher/lizkdc; (left) courtesy the City of Boston Mayor's Mural Crew. (For more information on Mural Crew: http://bostonyouthzone.com/teenzone/employment/muralcrew).

by The City of Boston Mayor's Mural Crew
title Lantern Parade
location Municipal parking lot off of Burroughs Street behind Bukhara, 701 Centre Street, Jamaica Plain

This mural celebrates the neighborhood's Lantern Parade, an annual procession around Jamaica Pond with homemade lanterns, held on the last Sunday in October. Photo courtesy the City of Boston Mayor's Mural Crew. (For more information on the murals of Jamaica Plain: http://communityartsadvocates.org/JamaicaPlainArtsMurals.html).

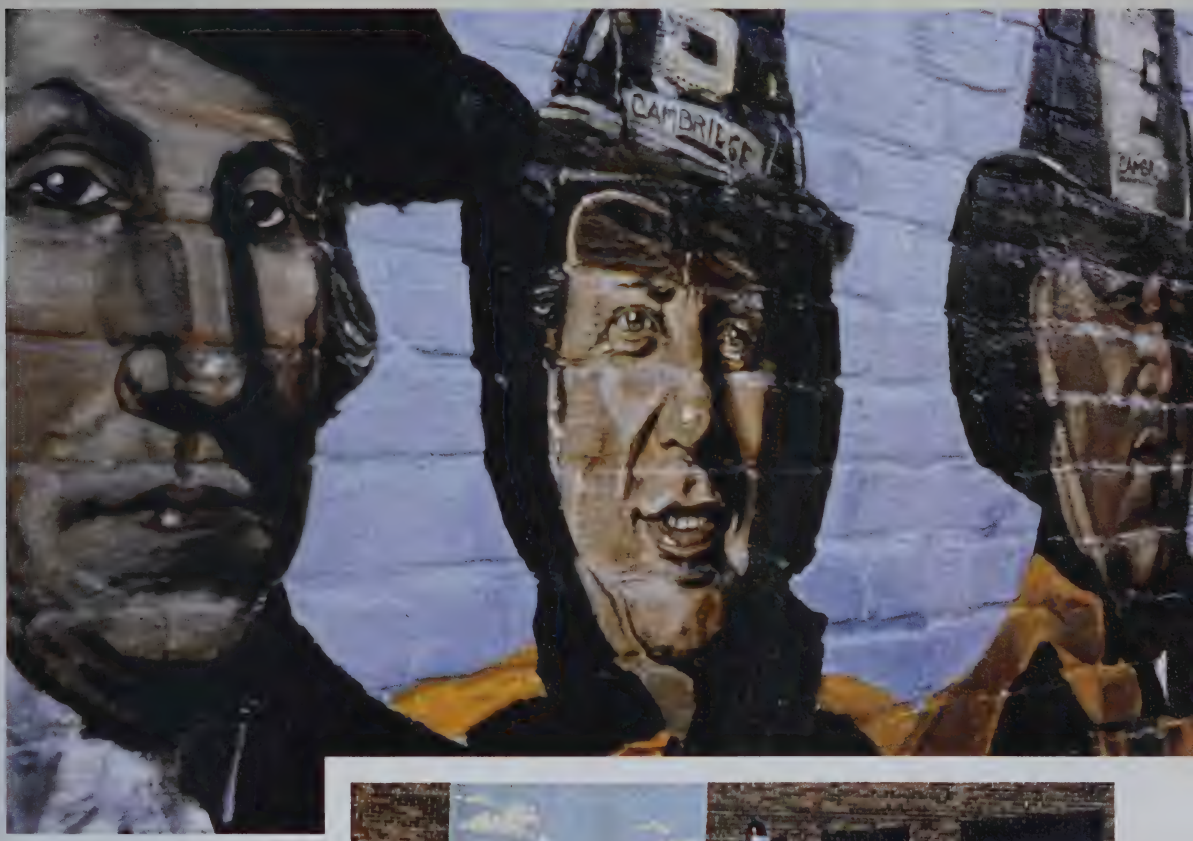






by **Roberto Chao and local community** title **Our World** location **Rafael Hernández School, Roxbury**
Conceived as a jigsaw puzzle painted on plywood, this 38-by-16-foot mural was originally installed in 1989 and was redone in 2007 with the assistance of students and community volunteers. Photos courtesy the artist.

by Ellery Eddy **title** Engine Company No. 5
location 1384 Cambridge Street, Cambridge
This 15-by-25-foot mural, completed in 1976, was commissioned by the Cambridge Arts Council with funding from the US Comprehensive Employment and Training Act. It features portraits of all the members of Engine Company No. 5 (including the company dalmatian) as well as Benjamin Franklin, who founded the first volunteer fire department, and George Washington, who lived in Cambridge during the Siege of Boston. Photos courtesy the Cambridge Arts Council. (For more information on Cambridge murals: http://cambridgema.gov/CAC/public_art_tour/murals.html).





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Covering the Issues



The green giant... An inspiring speaker, talented architect, and Pied Piper-like visionary, green guru William McDonough has played an instrumental role in promoting and popularizing ideas about more environmentally positive design. Yet in "The Mortal Messiah" (***Fast Company***, November 2008), Danielle Sacks pulls back the curtain to reveal an extensive litany of tales of outsized ego, supersized fees, disillusioned associates, and projects that fall far short of their promise. The truly tragic part seems to be that much of the promise of McDonough's work has been "stalled by a logjam of his own making." It's a cautionary tale about the possible influence — and limitations — of a single person, the complexities of vision meeting reality, the importance of relationships, and the power of the media.

Two-fer... The newly redesigned ***Atlantic Monthly*** (November 2008) offers two short pieces that warrant a second glance. In "A Question of Balance," Pentagram partner Michael Bierut describes the millions of decisions involved in a design process, the challenge of finding the equilibrium between conceptual ideas, budgets, and schedules, and the desire to honor history while shaping a fresh, forward-looking direction. Bierut is describing the magazine's redesign, but his approach applies to other projects, too. In a very different vein, writer Scott Borgerson and cartographer Bryan Christie offer a provocative graphic essay in "Sea Change." Based on scientists' prediction that the planet will have a direct, ice-free Atlantic-Pacific connection within the next five years, Borgerson and Christie speculate on the effects of this new waterway on seaports, transportation, and geopolitical alliances. To architects, this could dramatically alter the transport of materials as well as the urban forms of waterfront cities, affecting where we work and how.

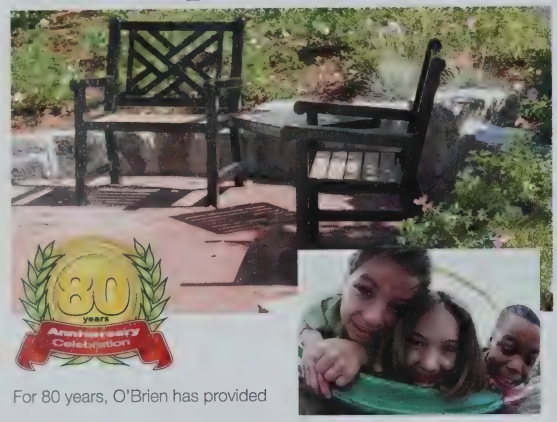
Energetic writing... ***Forbes*** magazine's special issue on "Energy + Genius" (November 24, 2008) includes a truckload of articles on the theme, both high-minded and highly practical. Asleas Ebeling's "The Green Tax Gusher" gives readers a handy guide to tax credits for incorporating geothermal, solar, and wind systems, as well as for simple energy-efficient improvements, arguing why this work makes economic sense even for the individual homeowner. In "Boost your Albedo," Matthew Craft interviews Arthur Rosenfeld, the founder of the Center for Building Science at Lawrence Berkeley National Laboratory, who predicts that increasing the whiteness and surface reflectivity of roofs would reduce US cooling costs by $1 billion annually. Craft then goes to the UAE in "Utopia in the Desert," describing young Arab investors putting revenues from the oil sector into new types of energy as they aim to create the world's first carbon-neutral city.

Twin set... The "Art Issue" of ***The Believer*** (November/December 2008) includes a few selections of architectural curiosity. In "The Lost Twin," Jonathan Taylor takes readers to the Bank of Oklahoma Tower, a project by Minoru Yamasaki completed three years after its more famous New York siblings. This tower seems "sized down and ordered up as if from a catalog of urban design, in international units to be manipulated and stacked," writes Taylor as he muses on its significance, and its oddity. Closer to home, artist Chris Cobb ponders the meaning of a line in "A Perfunctory Affair," as he reports on his experience installing the humongous drawings of the Sol LeWitt retrospective now on view at MassMoCA: "The line itself is not sacrosanct; it's the idea of the line." In an abstract, highly conceptual, fine-art sort of way, Sol LeWitt's work is like the work that architects do: they make instructions that others execute. Bringing the instructions to life requires judgment, interpretation, and translation of stated intent, with many people involved in the making.

Bucky, come back... ***Artforum*** turns architectural with Buckminster Fuller on its cover (November 2008). Now 25 years after his death, the editors argue that our contemporary world needs Fuller's category-defying, science-meets-design-meets-society thinking more than ever. Here, an artist, an architect, a historian, and a handful of architectural critics go beyond the geodesic dome as they take turns explaining and imagining what Fuller's life and work has meant, and what we might still learn.

Gretchen Schneider, Assoc. AIA, is the principal of Schneider Studio in Boston.

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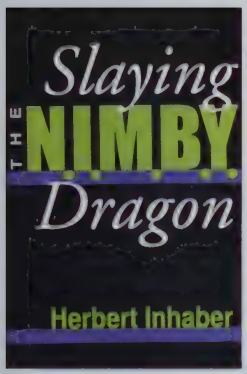
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SLAYING THE NIMBY DRAGON
By Herbert Inhaber
Transaction Publishers. 1998

NOT IN MY BACK YARD: THE HANDBOOK
By Jane Anne Morris
Silvercat Publications. 1994

To corrupt Mark Twain, everybody complains about NIMBYism but nobody does much about it. Does anything else in the planning realm occasion more *agita* and less analysis? A Google search triggers an avalanche of hits from the popular press, but there is scant serious writing on the protectionist sentiment best summed up by the phrase "not in my back yard." Two books, one by an earnest utility scientist, the other by an unapologetic neighborhood activist, reflect the two sides of the debate, and never the twain shall meet.

Herbert Inhaber's experience doing risk analysis for power plants prompts him to propose a "reverse Dutch auction" to resolve siting controversies for LULUs — Locally Undesirable Land Uses. The siting authority would announce objective siting criteria. Like passengers being paid to give up their seats on overbooked flights, the amount a community with an eligible site would be paid for hosting a facility would be raised in increments until somebody says "aye."

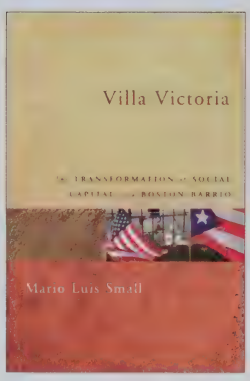
Inhaber assumes such facilities serve a public purpose and that a rational siting process will overcome resistance. But this "better living through chemistry" approach is only useful for government or utility facilities subject to a formal site selection process and able to fund the bid amount, and it must fight the perception that poorer communities are being bribed. Maybe that's why nobody has taken him up on the idea yet.

Jane Anne Morris makes an exactly incompatible set of assumptions: that LULUs are unacceptable and are likely being advanced in bad faith by incompetent public officials, and that passion and guile are more important than rationality in opposing them. The book offers a host of stratagems in a tone that mixes outrage and upbeat self-help.

Unsaid in either book is that some of the reasons why neighbors oppose development are supportable and some are not, and it is important to distinguish them. The benefits of development are diffuse and general, while the impacts are specific and local. NIMBYism distributes development impacts and allows the neighbors to protect their biggest assets, their houses. It's not so much a dragon to be slain as a distorted form of civic expression to be managed — a type of market determinism, like Wikipedia, where the users determine the content.

But NIMBYism is also the bitter fruit of a pluralistic democracy in which self-interest is venerated as an essential motive force of both government and the economy; to follow it to its logical conclusion invites paralysis. Who will tell the cranky neighbors that the social contract entails a share of the burdens of civil society? In this dawning era when government is being called on to solve big problems, this just might get easier.

Matthew J. Kiefer is a land use attorney at Goulston & Storrs in Boston. He teaches in the urban planning program at the Harvard Graduate School of Design.



VILLA VICTORIA
THE TRANSFORMATION OF SOCIAL CAPITAL IN A BOSTON BARRIO
By Mario Luis Small
University of Chicago Press. 2004

This book tells the story of Villa Victoria, a mostly Puerto Rican neighborhood in Boston's South End. The subject is one close to my heart. In 1975, after graduating from the Harvard Graduate School of Design, I went to work at IBA (Inquilinos Boricuas en Acción), the parent agency of this residential development, as the planner of some of its housing projects.

Villa Victoria was an outgrowth of the experiment we call "social housing." The federal housing programs of the late 1960s and early 1970s carried a new promise — that of safe, clean, family-oriented, even beautiful, new housing under the aegis of the private sector and with subsidies for renters.

Villa Victoria went one step further. Through tenant advocacy and community participation, the "community" — the ultimate user — would control its own destiny and shape its own environment. Therefore, Villa Victoria's physical characteristics — its urban pattern and architectural language — were as much the conception of the whole community as of the architects.

Its social aspirations also went one step further. The development was to be a model of self-sustaining advancement of a poor

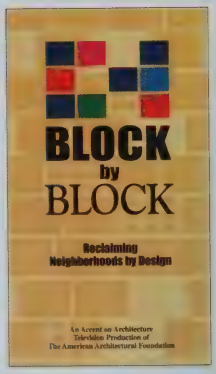
community, encompassing a gamut of bootstrap strategies to ensure its evolution into a thriving middle-class community. And so there were schools to teach English as a second language, vocational training, a local TV station, cultural programs, and a daycare center for working mothers—one that would preserve Latino culture. Economic development opportunities were included through the creation of community-based enterprises. There was even the hope that, upon expiration of the subsidies, the housing could be bought by the residents in the form of a cooperative.

So, what happened to all of that? The author lets us know many parts of the story. First the neighborhood organized and transformed itself into a model community. Then slowly, as the buildings deteriorated, the community lost interest in participating in upkeep, the level of crime increased, and the neighborhood came to be seen as a slum within a prosperous community. The level of poverty has not changed in the intervening 40 years, and the level of community participation has waned over time.

The reasons are many: physical isolation; lack of commitment by the newer generations; lack of linguistic and cultural integration. Even so, we are left with a glimmer of hope for this community. The percentage of high-school graduates has increased. Crime is currently down. And the whole neighborhood has been recently upgraded through much-needed physical rehabilitation.

I wish the author had spent more time analyzing the urban design of Villa Victoria, since I believe this contributed immensely to the sense of isolation he accurately identifies. Architects don't promulgate urban policies, but they do give them physical form. I am thus left wondering if the affordable housing that we embark on today with such idealistic hopes requires a more critical evaluation.

Fernando Domenech AIA is a principal of Domenech Hicks & Krockmalnic, an architecture and planning firm in Boston, New York, and San Juan.



BLOCK BY BLOCK: RECLAIMING NEIGHBORHOODS BY DESIGN
Video, 56 minutes
Hosted by Charles Royer
The American Architectural Foundation, 2001
(forthcoming on DVD from AAF;
for VHS: 1-800-365-2724, ID# 904)

Three neighborhoods, three strategies. *Block by Block* highlights the successful revitalization strategies for three declining



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and forgotten urban neighborhoods in Atlanta, Hartford, and Denver. Although each come-back story is unique, they all shared a dogged determination to reinvent themselves. The question is whether these strategies would still prove successful today.

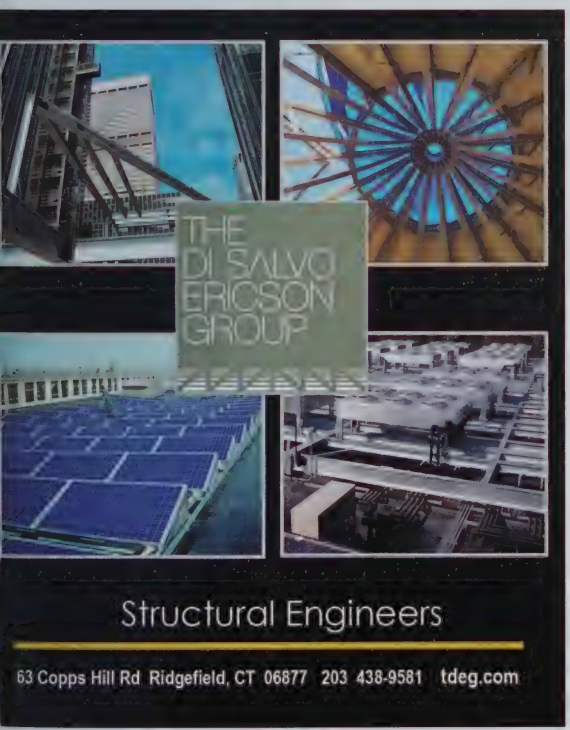
Atlanta's once-thriving Sweet Auburn neighborhood, the birthplace of Martin Luther King, Jr., was the historic center of Atlanta's black community. By the 1960s, Sweet Auburn had fallen into decay as successful blacks moved to surrounding suburbs. Then, in the 1980s, several residents, determined to bring back their community based on pride in its historic importance, began to acquire old houses and renovate them. They devised a "block-by-block" strategy of renovating an entire block at one time to create a critical mass of improvement. Once a stable residential population had returned, they turned their attention to restoring the neighborhood's commercial vitality. By 2001, their strategy had proved successful.

Hartford's Frog Hollow neighborhood adjoins Trinity College. Once a thriving working class neighborhood, Frog Hollow had fallen into decline as factory jobs left the city. Soon, crime, drugs, and decay plagued the community. Nearby, Trinity College felt the impact: visiting parents felt unsafe, and admissions noticeably declined. Recognizing that something needed to be done, the president of the college partnered with his neighbors, the city, and other institutions to revive the district. He demolished notorious crack houses, revived neighborhood housing with low-cost loans, and finally built a complex of public schools for the community. By 2001, the town-gown partnership was an admired success story.

Denver's Lower Downtown (LoDo) neighborhood was that city's historic brick warehouse district. After the railroad industry declined, the warehouse district saw extensive abandonment and, by the 1960s, many buildings were scheduled for the chopping block. Alarmed by the potential loss of this part of the city's history, a local developer saved and renovated Larimer Square as a commercial magnet. But for a long time, through repeated cycles of boom and bust, it remained an island of successful historic preservation in a sea of decay. After the election of Mayor Federico Peña, the city worked with citizens groups to create a vision for LoDo to revive the district based on its historic importance and architectural integrity. Today, the area thrives as a successful neighborhood of loft housing, entertainment venues, shops, and the home of Coors Field.

If there are common ingredients linking these success stories, they are local leadership initiative, pride in a neighborhood's history, a game plan, and forged partnerships. These ingredients are as necessary today as they were in the past. The critical piece that may be missing today is readily available credit, mortgage financing, and generous institutional and corporate support. Tough times may be ahead for some of our urban neighborhoods.

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www.cityofboston.gov/mainstreets/PDFs/BakedBeans_2008.pdf
Boston is famously a "city of neighborhoods" — explore the small-business districts of 19 of them.

LEED FOR NEIGHBORHOOD DEVELOPMENT
www.usgbc.org/DisplayPage.aspx?CMSPageID=148
The US Green Building Council has proposed a rating system that will integrate "the principles of smart growth, urbanism and green building into the first national system for neighborhood design." A pilot version has been tested, with a revised version launching in the summer of 2009.

FORT POINT ARTS COMMUNITY
www.fortpointarts.org
BRICKBOTTOM ARTISTS ASSOCIATION
www.brickbottomartists.com
FENWAY STUDIOS
www.friendsoffenwaystudios.org
We all know the formula now: funky industrial buildings + resident artists colony = neighborhood. Fort Point and Brickbottom are two of the region's best-known artist live/work communities, part of an urban tradition that started locally in 1905 with Boston's Fenway Studios.

HARVARD'S ALLSTON INITIATIVE
www.allston.harvard.edu
One-stop shopping for the official word on Harvard's planned expansion into the Allston neighborhood, including meeting notes, reports, plans, drawings, and photographs.

NIMBY BOSTON
www.nimbyboston.blogspot.com
One thing about living in Boston — you never get bored.

STOP THE BIOLAB
www.stopthebiolab.org
The biolab proposed by Boston University for a site near the Roxbury and South End neighborhoods for the study of some of the most dangerous known pathogens is itself worthy of study: neighborhood activism, politics, money, and environmental justice — it's all here. Check out the impressive student presentation under "Voices."

MR. ROGERS' NEIGHBORHOOD
http://pbskids.org/rogers
"For neighbors of all ages." Maybe not. But if you really want to know where you can see the sweater, this site will tell you.

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Somerville's Union Square



v Photo by Mimi Graney; courtesy Union Square Main Streets.

I don't live in a neighborhood. Which is to say, I live in a place with wide sidewalks, where everyone's front doors are in close proximity and people nod at each other when they're jogging or walking, but where no one really connects. It's nice enough, but lately I've found myself wondering what is missing.

The answer occurred to me during a visit to Somerville's Union Square.

As you approach the intersection where Somerville Avenue, Washington Street, and Prospect Street meet, Union Square hardly appears neighborly. Driving up Washington Street, the snare of traffic seems destined to dump into a large parking lot.

On foot, however, Union Square reveals itself to be infinitely more appetizing.

My first taste of this was when my friend and I ventured into the neighborhood for an ethnic-market tour. Unremarkable-looking from the outside, normally these cramped, fluorescent-lit corner shops wouldn't draw a second look, never mind a visit. But inside each lay a culinary passport to cultures around the world: halal meats, Korean pastries, beef butchered just right for churascaria, frozen fish from Bangladesh. As part of the tour, the shopkeepers volunteered recipes and eagerly shared how they use such foreign ingredients at home.

Later, as I unloaded my shopping bags, I realized what my traditional New England Main Street block is missing: We have food in my town, but it's safely put away in pantries, cupboards, and refrigerators. In Union Square, it's everywhere you look.

Not long after the market tour, my husband and I planned a date in the square, starting with a Peruvian dinner at Machu Picchu, followed by a stroll through the "What the Fluff" festival, which for three years now has celebrated the sticky marshmallow sandwich filling invented here by Archibald Query in 1917. More than 1,000 people also showed up, and the once-ominous parking lot was transformed into a true block party that spilled onto an adjacent plaza. Sugar-fueled kids bowled plastic balls at empty Fluff containers, while their parents indulged in Fluffer Nutters, in brazen defiance of the FDA food pyramid. My husband and I commiserated with strangers at the booth where the Fluff ice cream had already sold out.

The same plaza also lets you meet the faces behind your food at a farmer's market every Saturday from June through October. You only need to squeeze a fuzzy peach while bantering with one of the members of the third generation of Nicewizc farmers to understand why the "locavore" movement continues to gain momentum.

Although Somerville is one of the densest communities in the country, the city teems with green. Personal gardens and grapevine arbors hide in the small spaces between triple-deckers, hinting at the culinary lives within. And at the Somerville Community Growing Center near Union Square, both local students and the public can connect over producing food — from juice pressed from grapes and apples harvested in its garden to maple syrup made from trees tapped throughout Somerville.

On a recent Saturday in Union Square, my husband and I passed Bloc 11 café, where people hunched over laptops and books in the company of similarly quiet souls. Outside The Neighborhood Restaurant, locals made small talk as they sat on the sidewalk and stood in line, patiently waiting to sate their hunger with a huge Portuguese lunch. At Casa de Carnes, my husband and I kidded around with the butcher before taking away two beef sausage links for our Sunday breakfast. And at International Foods, the cashier patiently answered our questions about tortillas and Mexican farmer's cheese while helping another shopper choose from the several sacks of rice on display.

When I returned home to my street full of nail salons, tanning parlors, and vague acquaintances, I wished my town had remembered to leave room for food. We need something to share. A true neighborhood provides more than the simple fulfillment of our shallowest impulses — it offers nourishment. ■

Genevieve Rajewski is the director of communications at the Boston Society of Architects and writes about food for *The Boston Globe* and *Edible Boston* magazine.



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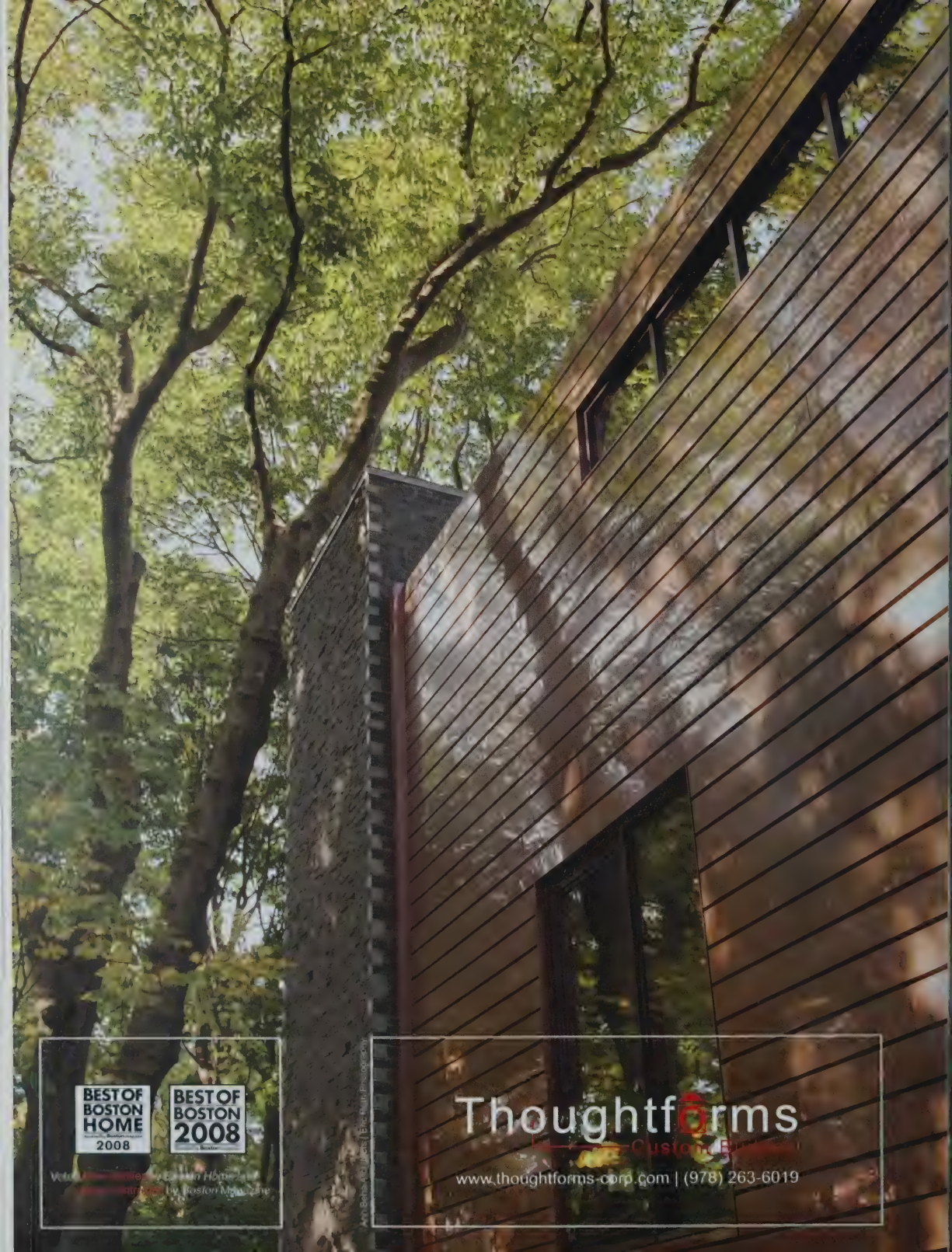
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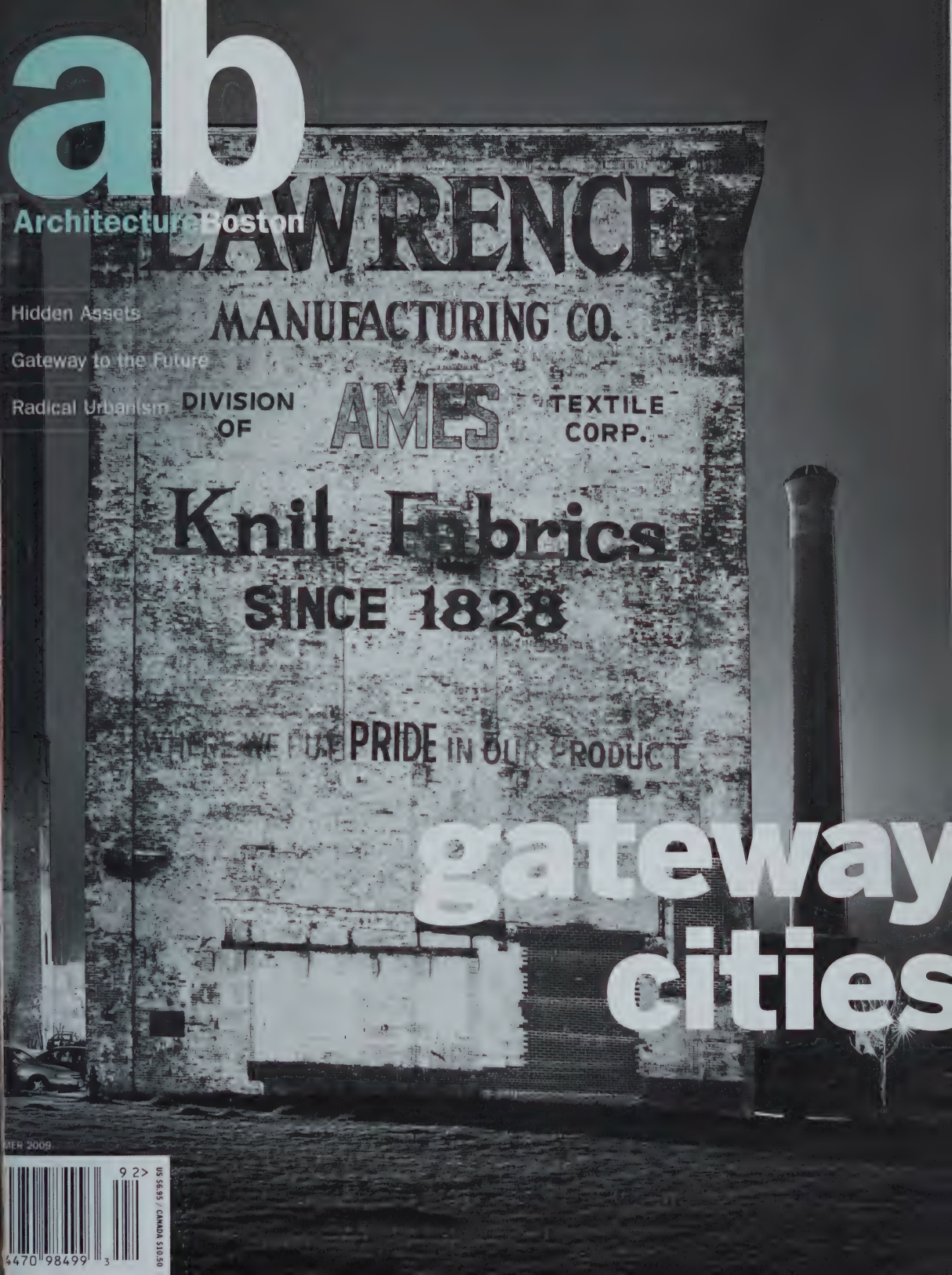

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Cover image: *Lawrence Manufacturing*, Lowell, 2008. Photo by Lance Keimig.

This page: The politics of economic development: Senator John Kerry and local elected officials tour the Vectrix Corporation research, development, and distribution facility in New Bedford, 2008. Photo by Deborah L. Hynes; courtesy City of New Bedford.



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That might sound like an ad for a "New Urbanist" development (with the exception of the "affordable" bit), but in fact, it's a description of life in many old industrial cities in Massachusetts. Sometimes it's hard to remember that before there was a New Urbanism, there was an Old Urbanism that worked pretty well.

Today, thanks to the efforts of Boston-based think tank MassINC, more people are remembering. In 2007, MassINC teamed up with the Brookings Institution to produce a report on the "Gateway Cities" of Massachusetts — 11 former mill cities: Brockton, Fall River, Fitchburg, Haverhill, Holyoke, Lawrence, Lowell, New Bedford, Pittsfield, Springfield, and Worcester. The report demonstrated that these cities had been left behind while Boston enjoyed unprecedented economic growth, documenting some of the reasons but also some of the opportunities. Since then, a remarkable thing has happened: in less than two years, people have started to think of these cities not as problems, but as solutions. It's the political equivalent of a score on *Antiques Roadshow* — treasures whose value was largely forgotten are suddenly getting attention.

This is a Massachusetts story, but it's also a story with implications for post-industrial cities everywhere. The MassINC report came at a time when the state was focusing on smart-growth strategies while wrestling with the lack of affordable housing in the Greater Boston region. Meanwhile, these older communities, most within an hour or hour-and-a-half drive from downtown Boston, were languishing despite the availability of a work force, cheap space, housing, and infrastructure, as well as many public amenities. That confluence alone, with the benefit of enlightened public policy, would be enough to give a boost to the Gateway communities. But current economic conditions might prove to be the final push that these cities need, because everyone, everywhere is looking for new ideas and new approaches to old problems.

Many of these cities are poised to take advantage of the new attention, with energetic political leadership and top-flight talent in administrative positions. They are working hard, aggressively wooing employers while simultaneously pursuing new development tools, such as form-based codes and Growth Districts. They understand that their mill buildings, once derelict reminders of former glory, are architectural wonders equal in area to Boston office towers, with enormous floorplates that are impossible in a major urban center. These are cities that are open to entrepreneurship and reinvention: "retooling" is not a metaphor in an industrial community; it's a way of life.

Of course, these cities face challenges that vary from community to community, but that together have long tainted perceptions of their health and viability. Some have pockets of deep poverty, and attendant problems with crime and drugs. Some have struggling schools. Some have ossified governance structures that reward old-time political oligarchies and shut out newcomers, including new immigrant populations. The problems are daunting but can at least be ameliorated with economic growth.

This is a Massachusetts story, but it's also a story with implications for post-industrial cities everywhere.

As we increasingly embrace sustainability as a public value, we cannot afford not to invest in these communities — and in the other smaller cities of Massachusetts that similarly have enormous infrastructure capacity and a rich, if sometimes neglected, building stock. The 19th-century textile and shoe industrialists generated vast family fortunes. We are only now realizing the extent of their vast public legacy, and the extent to which its value has compounded. How many growing industrial cities in other parts of the world will be able to say the same when their time has passed? ■

Elizabeth S. Padjen FAIA
Editor

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In Brent Ryan's ambitious and well written article, "The Once and Future Neighborhood" [Spring 2009], the author is correct in calling for a wider array of neighborhood models than the suburbs have offered to date. Infusing uniform and homogeneous housing tracts with new uses, hybrid building typologies, and higher density can, among other strategies, contribute to creating a more varied urban fabric addressing the needs of an increasingly diverse populace. While design innovation can contribute to addressing the search for a new multifarious urban order, the challenges of realizing this vision are not insignificant, as serious hurdles associated with property rights and outdated zoning regulations need to be overcome.

Yet the current financial crisis highlights the need — and opportunity — for generating new solutions to the "suburban problem," the focus of many recent articles in the popular press by David Brooks, Paul Krugman, Allison Arieff, and Bruce Katz, among others. As large patches of suburbs from Charlotte, North Carolina to Las Vegas are boarded up and decaying (see "The Next Slum?" by Christopher Leinberger in *The Atlantic*, March 2008), malls and retail centers are failing at an alarming rate (see www.deadmalls.com). Richard Florida notes in his recent *Atlantic* article ("How the Crash Will Reshape America," March 2009) that these symptoms reflect a deeper shift in the country's spatial-geography resulting from fundamental and historic changes in our nation's underlying social and economic structure. With over 50 percent of the populace living and working in suburbia, the success of the country very much depends on the suburb's economic, social, and environmental health. To survive as a country, we need designers to take a leadership role in addressing these issues, as the transformation of suburbia is the design frontier worthy of the most innovative talent.

As Rahm Emanuel recently noted, "You never want a serious crisis to go to waste." The stimulus package, with its emphasis on infrastructure, green building, and development of renewable energy sources coupled with design innovation, can help transform this crisis into an opportunity to regenerate a new, more varied and sustainable (sub)urban metropolis.

Paul Lukez AIA
Paul Lukez Architecture
Somerville, Massachusetts
Author, *Suburban Transformations*

Your panelists on community-institutional relations ["Them and Us," Spring 2009] were correct in their belief that a new, more constructive era in "town-gown" relations is possible. This hope is based on an increased appreciation that great institutions exist in stable, diverse neighborhoods, and likewise that residential communities benefit from healthy, engaged institutions.

For our part, Fenway CDC — no stranger to town-gown struggles — has turned the page, making the pursuit of institutional partnerships a centerpiece of our strategy to advance our vision of a diverse, vibrant community where institutional and community interests are balanced and synergistic. But this endeavor is a two-way street. While institutions recognize that they benefit when they exist in stable, pleasant neighborhoods, too often that recognition is trumped by their insatiable appetite for property. Such encroachment undermines the viability of the residential communities and destroys trust between the institution and the community.

Until the institutions and city government, which serves as referee in these interactions, prioritize viable communities and mutually respectful community-institutional relations over unfettered expansion, it's premature to declare that a new era for town-gown relations has arrived.

Carl Nagy-Koechlin
Fenway Community Development Corporation
Boston

In "Them and Us," Steve Cecil comments that "We have to make sure that the focus is on the neighborhood and what makes a great neighborhood."

Unfortunately, the focus in North Allston and North Brighton for the last decade has emphasized designing a great future campus for Harvard University, and this has often been in direct conflict with having a great and vibrant neighborhood today. Harvard has purchased hundreds of acres, has gone to court to evict a major tenant, and has established a real estate monopoly and an abundance of vacant and under-utilized property far beyond the borders of its 50-year master plan. The Boston Redevelopment Authority and Harvard frequently remind residents about the eventual renaissance of our community, but those vague promises stand in stark contrast to the blighted property that Harvard has mothballed.

Also in that article, Rebecca Barnes stresses the importance of trust and transparency, and Omar Blaik notes that "the administrative structure of most institutions has never been designed to engage with the community." Harvard's Allston Development Group is responsible for obtaining zoning permits, but it isn't clear if anyone at Harvard is dedicated to building a relationship with its neighbors based on common interests. The ingredients of an enlightened town-gown relationship make so much sense, which makes Harvard's narrow self-interest and the BRA's acquiescence all the more perplexing for community leaders in Allston and Brighton eager to support a mutually beneficial Harvard expansion.

A recent letter by Mayor Thomas Menino to Harvard President Drew Faust suggests that making a great neighborhood may soon become a priority. My neighbors and I hope that Harvard and the City jointly embrace this notion in a sustained and meaningful way.

Harry Mattison
Allston, Massachusetts

"Hipsters in the Woods" indeed! David Fixler's article [Spring 2009] provides a good overview of the several communities of Modern houses that went up outside Boston in the immediate post-WWII years. We hardly felt like hipsters, but we were eager to get to work and, endowed with the zeal of the Modern movement, we were terribly eager to imbue everything we touched with our new-found identity.

The stars seemed to be beautifully aligned: land close to town was plentiful, construction costs were reasonable, mortgage rates were low, and there was in the Boston area a market (although limited) of well-informed potential clients (many forming new families and with limited budgets).

Today, land availability and costs of almost everything are drastically different. But one can still ask where is the zeal in the profession and the market for this sort of thing, this "adventure," if you will. The single-family house on its own plot of land, still a potent vision for Americans, may be less viable (at least in the crowded Northeast), but the tenets of Modernism can still be applied in more dense configurations: closer scrutiny on how people want to arrange their lives at home, more sensitivity to the features of a site — privacy, views, and in this latitude, orientation.

There are factors that get in the way of *objective* planning and design (among Modernism's tenets). When it comes to how they choose to live, Americans are very conservative. And developers (who dominate the market) do not stray very far from this perception. Still there are signs that things could change: life in these times might become more modest, municipalities are becoming more sophisticated in how their land might be developed, and developers are beginning to understand that a more sophisticated market is there to be satisfied.

Walter S. Pierce FAIA
Lexington, Massachusetts

David Fixler's "Hipsters in the Woods" told an inspiring story about citizens who saw the value in putting their energy into creating communities that would improve their quality of life. That there might be a renewed interest in homes that are smaller (and therefore more environmentally sustainable) and better designed than the feature-laden "products" that glut the new-homes market now is heartening.

However, I worry about glorifying the model of the single-family home on half-acre lots. Although the houses themselves may make "a minimal touch on the land," the wide sweeping roads that must connect them do not. The miles of utilities that must stretch throughout these rural settings are not an efficient use of our resources.

The word "community" was often used in describing these developments. How a sense of community was provided was not demonstrated. Are there places for neighbors to come into contact outside of their cars? Are there worthwhile destinations for non-driving teens? Are there places for the non-driving elderly to meet and socialize?

Another trait these developments shared in common was that they served a very distinct slice of society. Knowing that people who live in demographically homogeneous neighborhoods are less tolerant of those who are different from them, can we in good conscience promote a neighborhood development pattern that serves a single economic bracket, a single education level, a single version of the nuclear family?

I hope that society does find a renewed appreciation for the thoughtful design of the houses in these developments as well as the attempts that were made to preserve the natural topography, but I hope we can recognize which qualities are unsustainable, which qualities do not contribute to the health and well-being of our communities, and which should not be emulated.

Heather Holub RA, LEED AP
Jamaica Plain, Massachusetts

We want to hear from you. Letters may be e-mailed to epadjen@architects.org or sent to *ArchitectureBoston*, 52 Broad Street, Boston, MA 02109. Letters may be edited for clarity and length, and must include your name, address, and daytime telephone number. Length should not exceed 300 words.

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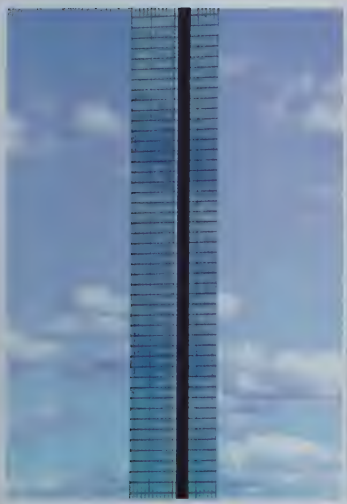
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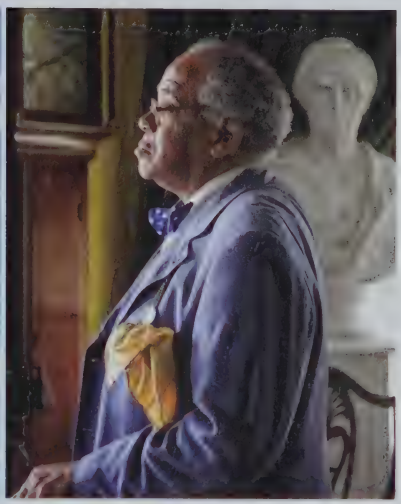
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Left: *John Hancock Tower*, 2006. Right: *The Reverend Professor Peter J. Gomes*, 2008. Both photos © Peter Vanderwarker.

Vanderwarker's Pantheon: Minds and Matter in Boston

Boston Athenæum
February 11–May 2, 2009

Sometimes the essential is revealed in something as secondary as a subtitle. Juxtaposing his long-time subject — the buildings that give form to Boston — with a new one — the people who are giving form to Boston — architectural photographer Peter Vanderwarker reminds us that extraordinary people create extraordinary places: the "minds and matter" of Boston.

In his current exhibition at the Boston Athenæum, brilliant, large-format images of buildings and people are intermingled and hung at eye-level. A statement by the sitter accompanies each portrait. The adjacency of buildings to humans brings each to greater life than if they were shown apart from one another.

Among the "matter," we find a series of images of the John Hancock tower. Seen in slender profile at different times of day, it's an ode to a building that transcends its architecture. Among the "minds" we find: James Carroll, who looks us in the eye, saying "I am a writer … to be a servant of the word is an honor." Renata von Tscharner, shown swimming in the Charles River she has worked so hard to restore. John Sears, surrounded by his books, who says, "I have tried to find and promote quality, excellence, and beauty." Vanderwarker invites his human subjects to be fully present, much as he has learned to capture the essence of a building.

In this time of enormous uncertainty, Vanderwarker presents us with a vision of a city, human and built, that can elevate and inspire us to demand the best of architecture and to work for the best as citizens.

Brigid Williams AIA is a principal of Hickox Williams Architects in Boston.

Detour: Architecture and Design along 18 National Tourist Routes in Norway

National Building Museum
Washington, DC
January 28–May 25, 2009

Ah, to be Norwegian. It's a bit like being Swedish, but with scads of North Sea oil money. Those geographically gifted Norse, with their national design policy advocating Modernism, know how to furnish a scenic highway for the 21st century: Think WPA as administered by Sverre Fehn, a remarkable juxtaposition of the rural and the urbane, informed by an overriding love of honest materiality.

This distinctive, diminutive show serves as an ideal palate cleanser between some of the Building Museum's more substantive offerings. Photographs and models document overlooks, bridges, benches, observation decks, and lavatories that contribute minimally and gracefully to their breathtaking surroundings, some more successfully than others, but all in ways that make you wish you were there. That wish becomes an empty-chested longing as you watch, through brass binoculars, the artfully edited introductory film. The terrible beauty of the landscape almost immediately eclipses the architecture. And that's precisely the point.

Jeff Speck AICP, LEED AP is the principal of Speck & Associates in Washington, DC, and the former director of design at the National Endowment for the Arts.

Photo courtesy Todd Saunders/Tommie Wilhelmsen, Vegar Moen, and the National Tourist Routes Project.





< *Archisuit*, Los Angeles, 2005. © Sarah Ross. Action no. 38: Foamy Velour Suits Challenge Authority.

Actions: What You Can Do With the City

Canadian Centre for Architecture
Montreal
November 26, 2008–April 19, 2009
www.cca-actions.org

If many Modernist buildings are now literally crumbling, the reputation of Modernism generally has proved less friable. With its splendid hubris, Modernism remains a popular target for architectural polemic. The exhibition *Actions: What You Can Do With the City* positions itself squarely against — if not architectural Modernism *per se* — what Modernism has come to represent. The declaration of war comes in the exhibition's introduction: "We can no longer rely on the canonical tools of 'Modern' planning when designing and managing our urban space." In response to this putative failure, *Actions* presents "99 actions that instigate positive change in contemporary cities around the world."

In addition to six galleries, the exhibition comprises a multimedia website and a catalogue. The gallery space attempts to organize the *Wunderkammer* diversity of the "actions" into eight quixotic categories: Choose, Clue, Friction, Go, Guerilla, Plan Smarter, Share, and Low Effort. The exhibition deploys an impressive array of media, including videos, drawings, photographs, sound recordings, and objects; each "action" is accompanied by a brochure resembling an underground newspaper. The website allows visitors to participate by submitting their own "actions." The catalogue offers a number of interpretive essays. As a group, the essays offer unflagging optimism, but no original insights into the political dimension of architecture; they also show an unfortunate inclination toward the tendentious and self-congratulatory.

Notwithstanding the attempt to frame the exhibition as a report from the front of design's guerilla war against Modernism, the "actions" themselves exude a spirit of exuberant whimsy rather than earnest idealism. It is difficult to see, for example, how wearing or using a "Roller Suit" (basically a plastic-and-steel exoskeleton covered with roller-skate wheels) will "instigate positive change" in the sense implied. Still, in turning all hard urban surfaces into runways, the suit provides élan for any imagination willing to see possibility rather than imprisonment in our Modern concrete jungles. *Actions* showcases the power of design to unleash imagination, thereby revealing the profound truth that our cities contain untapped potential for play, work, and justice. Despite the curators' activist rhetoric and emphasis on planning, the exhibition itself suggests that our Modern cities may be fine as they are — it may be our own habits of thought that most urgently need reinvention.

Jonathan Powers is a PhD candidate in the history and theory of architecture at McGill University.



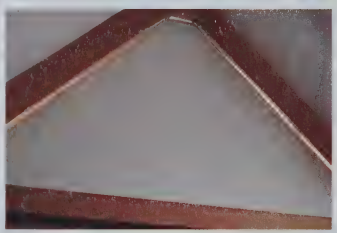
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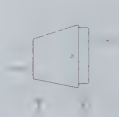
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The cleaner: Rodrigo, who moved here from El Salvador in 1990 and works for a cleaning and snow-removal company. He works five days a week, plays the guitar on weekends in a band at his church, lives with a roommate, and sends money home to his family.



∧ Photo by Joan Wickersham.

5:55 A winter morning, still dark. Silhouettes of men and women who have alighted at the bus stop, bundled against the cold and carrying their lunches, making their way along the icy sidewalks to work.

6:00 The back hallway of the cleaning company is full of men waiting to go out on jobs. Everyone is speaking Spanish. Handshakes, high-fives, some embraces. Behind a door at the end of the hall are the executive and administrative offices, which Rodrigo cleans every morning. He begins by laying out supplies: spray cleaner, a duster, cloths, and latex gloves.

6:04 Dragging a garbage can, Rodrigo makes an initial circuit of the empty office — a labyrinth of waist-high cubicles — emptying trash and relining wastebaskets. He picks up a couple of paper cups half full of cold coffee and empties them in the bathroom sink before throwing them away.

6:14 Rodrigo goes from desk to desk, dusting and cleaning surfaces. He straightens a little but is careful not to move papers around too much and not to throw anything away.

6:29 He dismantles and cleans the coffee maker, and wipes the countertop of yesterday's grains of sugar and coffee drips.

6:37 In the ladies' room, Rodrigo pours cleanser into the toilet and scrubs it with a brush. He cleans the toilet's surfaces with a cloth, and wraps it in another cloth so he won't accidentally use it again.

6:45 After vacuuming, Rodrigo pushes a button that raises the metal shutters on the front windows. In a couple of minutes the first accountants and administrators will show up for work. He does a quick mental checklist and then runs to wipe down the conference table.

7:01 The back hallway. The men have all left. The floor is wet with melted ice, muddy with sand. Rodrigo begins sweeping the mud into piles. Two other cleaners walk through, figuring out their schedule for the day. "You coming out with me?"

"Sure."

"Because I had someone else coming out, but he just canceled."

"I'm with you."

Posted on the wall is a notice in Spanish and English: "Horario de nieve," explaining that if you work for this company, where the work is not just cleaning but also snow removal, you need to come to work when it snows. "NO HAY EXCEPCION A ESTA NORMA."

7:07 Rodrigo cleans the men's room.

7:20 He's standing on a chair replacing a light bulb when the boss asks him to help with an emergency: a truck carrying the company's ice melt is stuck in the street, blocking traffic. The request is calm and cordial, but the problem is actually huge, as is the truck, a long flatbed that jackknifed coming out of a driveway and is now surrounded by police cars, blue lights blinking. Rodrigo joins a group of about 16 men, recalled from today's jobs, unloading the truck in the hope that lightening it will allow the driver to move it. Quickly, almost silently, the men are pulling the 50-pound sacks off the truck and carrying them on their shoulders back to the storage shed. It's going to take a while: there are 36 tons of ice melt to be moved.

7:40 With the truck partially unloaded, the driver is trying, unsuccessfully, to move it. Rodrigo reminds his boss, who's also outside carrying ice melt, that he has to clean another building before 8. "Right, OK," the boss agrees.

7:44 Back at the cleaning company, Rodrigo grabs a vacuum, a bucket, some cloths, and spray cleaner, and then runs down the sidewalk to the small office building next door. He whips through, emptying trash and turning on lights. Everything looks good. Tuesday is his big cleaning day here, and this is Friday.

7:59 Ladies' room. Replaces toilet paper, relines trashcan, checks paper towels.

8:01 Same thing in men's room.

8:03 Spray-cleans sinks, faucets, mirrors, soap dispensers in ladies' and men's rooms.

8:06 Quickly cleans both toilets.

8:08 Checks that the lights are working in the dance studio at the end of the hallway. He runs into the day's first arrival, a young woman who works in one of the offices. Rodrigo greets her calmly, wishes her a good weekend, and quickly vacuums the carpeted hall and vestibule.

8:10 On his way out, he picks up a thumbtack from the vestibule floor and puts it back in the bulletin board. "OK." He takes good care of this building and cleans it daily, so everything looks spotless even though he's had to rush through today.

8:12 Back at the cleaning company, Rodrigo sweeps the hall again: it's a smeary mess of dirt and grit from the boots of the men called back to help with the truck. Now, as he begins to mop, more men assemble in the hall. He mops, they mill around, and the dirt comes back as quickly as he can remove it.

8:35 Finally, after checking with the boss, Rodrigo empties the bucket, refills it with hot soapy water, and leaves it standing in a corner. After the men have left, someone else will quickly re-mop the floor.

8:40 He takes the bus over to the side-by-side apartment buildings he cares for. There's a supermarket near the bus stop; he picks up a salad for lunch, and stops to talk to some women standing in front of an abortion clinic. They give him literature in Spanish about shelters and adoption, which he will pass along to women in his church.

9:23 In the basement of one of the buildings, Rodrigo assembles supplies from neatly organized shelves, cleans the toilet in the small bathroom he uses, and changes his heavy boots for sneakers — he'll be running a lot over the next few hours, and the sneakers make him feel like he's flying.

9:40 Makes a quick circuit of the two buildings' basements, checking light bulbs, turning on outside lights, dusting, wiping off laundry machines.

9:46 Outside he checks that the lights have all come on. Inside each of the building's seven entryways, he checks the floors, which are carpeted, with marble borders; they're essentially still clean from yesterday's attentions, but flecked with ice melt from people's boots. Passes through the inner door, checks the hallway carpet, and peers up the stairwell to make sure all the lights are working, three floors up. Spray-cleans and wipes inner and outer glass surfaces of inner and outer doors.

10:05 Makes the rounds of the building's seven basement entrances, sweeping, checking light bulbs, and emptying and relining garbage cans. In some cases he stores liners at the bottom of the can, but some cans are habitually smelly and he keeps the liners nearby in boxes. He runs up several staircases where he knows that old ladies prefer to leave their trash in small knotted supermarket bags outside their



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back doors. Outside, he tests lighting fixtures, slinging rags over their photo cells to fool them into thinking it's dark.

10:22 The second building has five front entryways. He checks each and cleans the doors, which takes longer here because they're Plexiglas, harder to clean, and they have lots of panes. The tile floors are gritty and salty; he'll come back to mop later.

10:50 After he finishes the second building's five basement entryways, he uses a dolly to haul the trash to the dumpster. In the first building, where he's already emptied the communal basement cans, he now picks up the bags. In the second, residents put trash in cans on back porches outside their apartments. In each of the five back stairways, Rodrigo runs up four flights, and works his way down, emptying and relining cans.

Reaching the dumpster, he smiles with relief: the weekly trash pickup has already happened so there's plenty of room, unlike some Fridays when it's overflowing.

11:46 On one of his many dumpster trips, the dolly loaded with trash bags, a car pulls up and a woman gets out. The path is well salted, but she notices an icy patch. "Where's the sand and salt?"

"I'm going to put a little," Rodrigo says.

"Oh."

"I'll do it now," he says, and runs.

12:30 Lunch. He eats, checks messages, listens to music.

1:00 Gathers supplies. The building has a rhythm: in addition to the daily spot-check and light cleaning, Monday is the big trash day, after the weekend's accumulation; Tuesday is a thorough vacuuming; Wednesday a thorough mopping; Thursday brass polishing. Friday is Rodrigo's day to give extra attention wherever it's needed: today, with the icy weather, it's the brass door handles and kick plates, which have gotten dull and smudgy even since yesterday's cleaning.

1:05 Pushing a wheeled bucket of steaming, soapy water, Rodrigo cleans the two buildings' 12 vestibules: sweeping, mopping, tidying any mail and packages that have accumulated since his morning check.

1:45 Back in the basement, he drinks water — he's hot, even though the day is freezing. But he doesn't feel tired. In El Salvador, he was used to farm work and lumber work, both of which were much more grueling and paid only five dollars a day.

1:50 Crouches on the marble steps to start polishing the kick plate outside the first building's first door. As he circles the buildings, he also puts down more ice melt.

2:28 Finishes the second building's last door.

2:31 On his way back to the basement to store his supplies before returning home, he passes the dumpster. "See you Monday," he tells it. ■

Joan Wickersham's memoir, *The Suicide Index* (Harcourt), was a 2008 National Book Award finalist.



Hidden Assets

PARTICIPANTS

Robert Ansin is CEO of Mass Innovation in Lawrence, Massachusetts, which developed the former Anwelt Shoe complex in Fitchburg into a sustainable mixed-used project including affordable senior housing and a charter school. He is also the developer of Monarch on the Merrimack, the conversion of a former mill in Lawrence, among other projects.

John Aubin AIA is an architect and the developer of Open Square in Holyoke, Massachusetts, a mill complex with 685,000 gross square feet on an 8.5-acre site. Currently occupied by 50 commercial tenants, 15 percent of the complex has already been redeveloped as a net-zero-energy project. Open Square received a 2007 Smart Growth Award of Excellence for Mixed-Use Development. He was previously an architect in practice in New York City.

Maggie Super Church is a community development consultant in Lawrence, Massachusetts, where she is currently working with Lawrence CommunityWorks on the Union Crossing project, a mixed-use redevelopment of a mill complex. She was previously the executive director of Groundwork Lawrence, an urban environmental nonprofit organization.

Richard Henderson is executive vice president for real estate at MassDevelopment, a quasi-public state agency promoting economic development around the state — including the Gateway Cities — through planning, development, and lending and bond financing. He was previously the director of planning and development at Massport.

Arthur Jemison is a senior project manager at GLC Development Resources in Boston and has served as a consultant on several projects in Gateway Cities, including projects in Springfield's South End. GLC was development consultant to the Architectural Heritage Foundation on the recently opened Washington Mills project in Lawrence.

Timothy McGourthy is the director of economic development for the City of Worcester. He was previously the director of policy at Boston Redevelopment Authority.

Elizabeth Padjen FAIA is the editor of *ArchitectureBoston*.

Rebuilding the Gateway Cities*





Elizabeth Padjen: The Massachusetts Gateway Cities initiative is relatively new. It started in 2007 with a report produced by MassINC and the Brookings Institution and has gained traction since then. People are looking at these 11 mill cities as a key to smart growth but also for lessons on how we grow as a post-industrial society. But what has this initiative meant for the Gateway Cities themselves?

Tim McGourthy: It brought us together — partly in support of the message that these cities have value, partly to put the common challenges on the table and brainstorm solutions. We had a number of meetings that led to the Gateway Cities Compact, signed by all the mayors, which called upon the Commonwealth to work with us. For us, it was a real rallying cry, an opportunity to connect across municipal and regional borders and to put forward a unified approach and platform, which rarely occurs in Massachusetts. A legislative caucus has been formed, and the cities' economic development directors meet regularly.

*The Gateway Cities: Brockton, Fall River, Fitchburg, Haverhill, Holyoke,

Mill cities offer a case study in the connections between real estate development and economic development.



Top left and right: New Bedford: photos by John Robson; courtesy New Bedford Economic Development Council. Bottom left: Metacomet Mill, Fall River; photo by Marc N. Belanger.

Elizabeth Padjen: Has the Gateway Cities "brand" achieved recognition at the state level?

Richard Henderson: The state is beginning to see these cities as places that can accommodate growth and help to shift us away from past patterns of pushing into greenfields. The biggest change is in perception: people are thinking of the Gateway Cities less as problems to be solved and more as opportunities. They're starting to ask how we can leverage the fantastic architecture, the great access, the amenities like rivers and waterfronts, into being the next great places in the Commonwealth in which to live and work.

It's an important question for the whole state. Even with the recent reduction in housing prices, Greater Boston is still a very expensive place in which to live. There have been studies about the Massachusetts brain drain; it's essential to our future that we keep our educated young people in the state. Some kids getting out of college are willing to live in a hovel in Boston or Cambridge, but a lot of them instead go to Providence or Portland or leave the New England region entirely. The Gateway Cities can provide affordable, exciting urban places where young people can live in a sustainable, walkable environment.

Maggie Super Church: But there are also many young people who have grown up in the Gateway Cities who feel that they need to leave in order to find opportunity. We're losing a lot of our best and brightest from our own neighborhoods.

Lawrence has been growing in population since the 1990s, and 43 percent of the population is under the age of 24, which most communities consider a great signal. I was at a conference in Germany where people said, "We'd love to have so many young people, because they provide energy and talent." But for many generations, people in Lawrence dreamed of moving somewhere else as soon as they started to get ahead. So we really have to focus on brand identity, creating a sense that these are terrific places in which to stay and invest and grow.

Tim McGourthy: For a long time, these cities were defined by an aging population that had worked in manufacturing. But that's changing, and the work force is changing. Of Worcester's population between the ages of 25 and 34, approximately 42 percent have a bachelor's degree or higher. That is higher than Providence, Hartford, Manchester, or Portland, but it's a story that doesn't often get told. And unless that story is told, many businesses here in Massachusetts will look to Colorado, South Carolina, or North Carolina for their relocation, as opposed to Worcester, which is just 40 minutes down the Pike.

Richard Henderson: Let me tell you a story about Meditech — it's a medical software company with facilities scattered around Route 128. It was trying to hire young people just out of college, pay them a decent but not huge salary, and was having a lot of trouble competing with financial-services firms in downtown Boston. Young people couldn't afford to live in the suburbs where its offices were. Meditech's president happened to drive through Fall River past a site we had redeveloped, and instantly realized it was the perfect place for his business to grow. Even though the statistics show that the overall college-educated rate is very low in New Bedford and Fall River, he knew the area well enough to know that he could tap into people coming out of UMass Dartmouth and the community colleges — he knew that the labor force was there. Meditech now has about 300 people working in Fall River and has had no problem finding young people who want to live on the South Coast. It's a beautiful area and it's affordable.

Bob Ansin: These cities are man-made ecosystems that are once again in the right place at the right time in terms of the environment, immigration, the economy, and demographics. A recent story in *The New York Times* quoted Jeffrey Otto, a housing expert, who said the typical buyer of the future will be childless — he noted that Generation Y is turning 30 at the rate of 11,000 per

Lawrence, Lowell, New Bedford, Pittsfield, Springfield, and Worcester.

People are starting to ask how we can leverage the fantastic architecture, the great access, the amenities like rivers and waterfronts, into being the next great places in the Commonwealth in which to live and work.
Richard Henderson

day, and baby boomers are retiring at the rate of 10,000 per day. That's why I feel confident that I'll get a return on my investment in places like Fitchburg and Lawrence — they're the right place at the right time. When we were selling condos in Lawrence, two-thirds of our buyers were empty nesters from the Andover area and one-third were young professionals who didn't have kids.

Elizabeth Padjen: The other side of the demographic picture in many of the Gateway Cities is growing immigrant populations.



Left: Enchanted Circle Theater (arts education nonprofit), Holyoke; photo by Eric Poggenpohl; courtesy Open Square. Right: EM Letterpress, New Bedford; photo by John Robson; courtesy New Bedford Economic Development Council.

Arthur Jemison: It varies quite a lot. Springfield, Holyoke, and Lawrence have seen large growth, particularly in Caribbean Latino — especially Puerto Rican and Dominican — and Southeast Asian households. There's a growing embrace of those households, and we're seeing the increasing strength of these new immigrant groups as they assume leadership positions. It's one of the things that will distinguish the future of these communities.

Bob Ansin: The writer Thomas Friedman had a wonderful idea, one that could particularly benefit the Gateway Cities: pass a law so that anybody who comes here from another country who completes a four-year degree gets a green card stapled to the diploma. Right now, we're creating incentives for people to come here, get educated, then return to wherever they came from. It's crazy. Have you heard the statistic that at least a third of all new patents are going to immigrants? Some of our best and brightest people come from overseas, wanting to live the American Dream. We've lost population in Massachusetts and, without immigration, we would have lost a lot more.

Maggie Super Church: But as we look at these kinds of statistics, we need to remember that it's dangerous to peg all of our cities to a single demographic; it's better to recognize that great cities accommodate a range of people and needs. Nobody would say Paris is great because it's terrific just for empty nesters. People also raise families in Paris. Cities that function well have the physical and emotional space for all of those things to happen.

And that's something the Gateway Cities can offer. There's room in these cities for all types of projects. We need places for empty nesters. We need places for young professionals. We need places for families. We need places for businesses. And despite the affordability, we still need better affordable housing — a lot of it is in terrible condition. And there's an enormous amount of "place." The square footage of Bob's building is probably larger than the largest office park on Route 128, with 1.23 million square feet. It's hard for people who are familiar with Greater Boston to wrap their head around the scale of these cities and the scale of opportunity. We're not going to run out of space in the Gateway Cities any time in the next few years.

Elizabeth Padjen: John, your Open Square mill project in Holyoke includes both housing and commercial space. Who are your tenants? Are they people who are coming to Holyoke from other places? Or are they businesses that were already existing in Holyoke, upgrading to fancier digs?

John Aubin: We haven't started the housing component yet, but we know there is a strong market for housing. The commercial part, though, is up and running. Right now, approximately 15 percent of our tenants are start-up businesses. The others are businesses that were expanding. Our first target was not businesses already in the region. Holyoke suffers from enormous local and regional prejudice against it. Our target tenants were typically businesses from outside the area and people from the area who had left but came back — people who had lived in New York, California, Oregon, who looked at the city objectively and saw beautiful space at a very reasonable rate, an interesting mix of people, and the opportunity to be part of something that was changing.

Elizabeth Padjen: I would have thought that the easier sale would be to people who are already there.

Arthur Jemison: I can attest to John's experience; Maggie alluded to this, too. I grew up in the Pioneer Valley. Holyoke is sometimes its own worst enemy; Springfield, too. But people from New York City see an inexpensive, interesting urban environment that's enriched by all the colleges and universities in the area.

Bob Ansin: It's an important point, and I've experienced it in Lawrence. It's part of the social history of these cities — people were taught that Grandma and Grandpa worked hard so they could move up the ladder. But it's part of the physical history, too. People who grew up in these cities look at mills that were built for the textile industry, and do a kind of calculation: If textiles are an obsolete industry, then the buildings must be obsolete, and by extension, the whole area must be obsolete.

Maggie Super Church: But I would argue that mill buildings are among the most adaptable and durable structures we've ever built. What are we going to do with all the K-Marts 100 years from now?

We joke that people get "mill-struck." The first time they come to Lawrence, their reaction is always the same: "Oh my God, these buildings, somebody should do something with that mill!" As if no one else has noticed. Anybody who has even a hint of an interest in architecture or planning can't help feeling amazed.

Richard Henderson: And it's not just the mills, it's a lot of the neighborhoods — gorgeous Victorian houses that were built for millionaires in their day that are selling for $250,000.

Elizabeth Padjen: Tim, in your role as director of economic development in Worcester, you probably spend your days courting people. How do you go about attracting jobs, business, industry? What is your competition?

Tim McGourthy: We like to say our competition is Boston, Providence, Hartford, and Manchester, but in reality our competition is Shrewsbury and Westborough and the surrounding towns. Worcester is one city among 39 towns in Worcester County. So you have an island of urban-dwellers in a sea of people who want to be in a bucolic countryside setting. It's simple: Worcester is urban and they prefer rural. So our challenge is to get the message beyond the city borders and beyond the immediate region.

What we have found is that most of the major commercial brokerage companies focus on Greater Boston and end their coverage at Shrewsbury, the town next to Worcester. It's frustrating when you have four million square feet of office space on the other side of that line that doesn't show up on their maps of available office space. When pharmaceutical executives are sitting in Germany looking at a map for sites for their company, Worcester makes total sense. But when they come meet the brokers and are shown a map of Greater Boston and Worcester is off that map, their understanding of the region changes completely. So for us, the first challenge is to get into the mindset of the people who are actually out there talking to companies and to their representatives.

Elizabeth Padjen: Let's take it to the next step. How do you then sell Worcester?

Tim McGourthy: First and foremost, it's access to education. We have 10 colleges and universities within the city, 30,000 college students. And we have a huge, talented work force. We have over six million people within an hour's drive of Worcester. Remember that half of Boston is against the water, while Worcester has Boston on one side, Hartford on another, Providence on another. We're easily accessible, so we have a huge pool to draw from. With that comes the fact that our costs are lower: you can find great space for lower cost. Again, it depends on who we're competing against. If we're competing for that downtown office user, that's one thing. If we're competing against a greenfield site, we usually can't provide the acreage.

Elizabeth Padjen: What has been the experience of MassDevelopment with potential employers who might be thinking about these cities?

Richard Henderson: Many times, it's a case of trying to overcome perceptions about geography. We were talking to a major employer in downtown Boston, a financial institution, a few years ago. The company representative insisted Springfield was much too far away. "It's three hours away," he kept saying. "We cannot have our staff three hours away from the home base." And our guy said, "It's only an hour and a half away. *Albany* is three hours away." "No, no, no, I know it's three hours away." So one of the things we're trying to do is to bring the development community and brokers out to these cities. MassDevelopment has sponsored a series of developers' conferences, one in Springfield, one in New Bedford, one in Lawrence. Worcester is next. You have to get people to come and kick the tires and see that there is tremendous opportunity there.



Left top: Pittsfield: photo courtesy City of Pittsfield. Left bottom: Holyoke: photo by Eric Poggenpohl; courtesy Open Square. Right: Dr. Seuss Memorial Park, Springfield; photo courtesy City of Springfield.

We also have to overcome perceptions about the labor force; people think they can't get the kind of talent that is available in the Boston area. There are perceptions of crime and decline. These things are starting to change, but it's a slow process.

Elizabeth Padjen: One interesting aspect of the Gateway Cities is

that almost all of them are home to public or private institutions of higher education.

Bob Ansin: Several have community colleges, which I think are the wave of the future, especially in terms of work force development. The reason is that many of the next-generation employers are in specialized industries. Community colleges go to these employers and ask what they need; they provide direct training. The best example I can give is the win-win-win partnership forged between Springfield Technical Community College and the City of Springfield and the pre-eminent telecommunications companies of the world.

John Aubin: The Knowledge Corridor concept has been powerful—it refers to the region around the Connecticut River Valley that is now home to 26 colleges and universities—approximately 110,000 students—including some of the best in the country. Holyoke and Springfield are right in the middle of this amazing resource. But students graduate and leave because there are no jobs. And yet I've talked to technology companies that love western Massachusetts because employees tend to be more loyal—people like the atmosphere, the quality of the life, the access to major cities and major ski areas. If you move a typical Boston business out to western Massachusetts or some of the other Gateway Cities, you're automatically giving your staff a 30 percent raise because of the lower cost of living.

But one of the biggest problems is that people don't believe it. I'm really happy to hear that MassDevelopment is trying to change that, because half the battle is attitude: if people don't believe it, it's not going to happen.

Elizabeth Padjen: The Knowledge Corridor is a reminder of how we limit ourselves by the maps we draw—that's an economic and cultural region that has a cohesion that transcends state boundaries. Can the Gateway Cities compete with the larger New England-New York region?

Richard Henderson: Absolutely. We're working right now with a company that has some operations in New York, to help them grow its operations in Pittsfield. The Holyoke-Springfield corridor really relates more to Hartford, Connecticut than to Boston. There's been a real push for the Knowledge Corridor in recent years, even extending the concept down to New Haven and up to Amherst. It's a market of well over a million people and includes a major international airport. Marketing both states together, especially in terms of education and work force, actually makes a stronger case.

Elizabeth Padjen: Let's talk about some of the tools that the state has created to try to promote development in these cities. Some seem to have been subject to the Law of Unintended Consequences. For example, a MassINC paper reported on the "Economic Opportunity Areas," which are linked to the distribution of tax-credit money. But EOAs have also been established in relatively prosperous communities, which means that much of that tax-credit money is not reaching the Gateway communities. Now we have a new tool, the Growth District initiative.

Richard Henderson: Growth Districts are focused on areas where the state sees potential for growth and would like to encourage it. The intention is to coordinate a lot of the state's funding mechanisms—for example, matching a PWED [Public Works Economic Development grant] with a CDAG [Community Development Action Grant], a Growth District grant, and maybe a job-training program—and put them to work on a relatively discrete area within a city.

Tim McGourthy: Worcester recently established the state's first Growth District. It is a good tool for highlighting opportunities within the cities.

The larger problem, though, is that our tools don't match our public goals very well. For example, land development, business development, residential development, and retail development are all very different. Yet our tool set is constrained. The municipality has control over one funding source, and that's property taxes, so a city can only provide incentives related to land development. If we're trying to encourage a business to move into one portion of an existing building, we have nothing to put on the table unless we change the property taxes for that entire building and everyone within it.

The state, on the other hand, doesn't control land taxes. It controls income taxes. So the state can't really encourage land development except indirectly by providing incentives for business development.

What that means is there is no predictability; we can't guarantee an incentive package. The burden is on the developer to try to pull it all together. Our hope is that the Growth District concept will offer a little more predictability.

John Aubin: One of the problems of incentives is they become politicized, even if unintentionally. The single thing that any developer-builder appreciates and wants most is an "as of right" designation. In fact, I wouldn't have done the Open Square project if it weren't for its "industrial-general" zoning designation, which means I can build almost anything as of right without worrying about getting permission. A lot of programs inadvertently send the message that this is a political process. One example is the new 43D program, which offers expedited pre-permitting in the Growth Districts. The existence of a special program that guarantees reasonable permitting sends the message that permitting is a problem in this state.

Tim McGourthy: It's true that an incentive program is inherently a far more political process than a zoning program, at least in most communities. In a zoning discussion, you're working with a formal written code. With an incentive, it comes down to whether individuals feel like doing something or not—there are no regulatory standards or requirements.

> These cities are man-made ecosystems that are once again in the right place at the right time in terms of the environment, immigration, the economy, and demographics.
> *Bob Ansin*

Bob Ansin: As a private developer, I look at the building commissioner before I even look at the permitting process, because the discretion that a local building official has is tremendous. Chapter 34 of the Massachusetts Building Code is devoted to existing buildings. Some communities have building commissioners who understand it, and understand that they need to be creative. But I probably wouldn't go to some Gateway communities, because I don't have the sense that their building officials are really working for the city, so much as protecting their own fiefdom. Developers know these things, because we have to weigh risk. And if I can't get building permits, then I can't get a return on my investment.

Tim McGourthy: That's another kind of creativity that the Gateway Cities need — from the architectural community. Chapter 34 is only part of it. We're seeing projects designed by engineers without

Below: Storefront Improvement Program, Lawrence; photos courtesy Spalding Tougias Architects.







architects, projects that often fail to address quality-of-life issues or don't relate to their context or fail to set standards and expectations for high-quality design. These communities need architects to help them become the kind of thriving, vibrant, pedestrian-oriented communities that they could be.

Arthur Jemison: That underscores the importance of strong local leadership in imagining new futures for these communities. We have had success and a good experience where we have worked, but I think it's fair to say that, in the past, the Gateway Cities have mixed political leadership. As these cities start to think differently about the assets they have, it's going to be really important that they have the best planning, development, and building professionals as well as thoughtful, transparent political leadership.

Maggie Super Church: Lawrence is fortunate in that respect. But the more that we can end up with as-of-right permitting, the more we can end up with transparent scoring for grant programs. Whether you're a nonprofit or for-profit developer, big or small, you want predictability. Anybody who's putting money at risk wants to know when you're going to get there, how you're going to get there, how quickly you're going to get there, and what it's going to look like for the time that everybody's money is in the project. The thing that stops people cold is the sense that it might be a great return, but they might lose their shirts. And they are not going to go anyplace where that's even a possibility.

John Aubin: In many cases, the solutions are not that complicated — although the implementation might be. For example, Holyoke has the highest commercial property tax rate in the state, partly because the assessed values of older buildings are so low. We would be better off doubling the values of older existing buildings and halving the tax rate. I'd be paying the same amount, and I'd be happy to. The low values create problems for people like me when we talk to financial institutions. Even worse for the city, the system discourages new developers from coming in and building or buying property because it puts them at a competitive disadvantage — they have a disproportionately high tax bill that they have to add to their rents or their operating expenses.

Elizabeth Padjen: Returning to the Law of Unintended Consequences, it seems that affordable-housing programs, which typically include deed restrictions to prevent flipping and ensure future affordability, have some downsides in Gateway Cities, where the housing markets are very different from Greater Boston.

Arthur Jemison: In some of the Gateway communities, market rents are very close to the rents that are established for Section 8 vouchers and 60-percent tax credits — in effect, the market rents are already what is considered "affordable." So developers who want to build affordable housing have no incentive to build a market-rate building when they can build the same project for the same rents and get a tax credit for doing it.

If you build moderate- or low-income for-sale housing, the deed restrictions limit equity growth for the person who buys, and those deed restrictions hurt value. And then, over time, neighborhoods get locked into those uses and depressed values. Good-quality, well-managed, and well-maintained affordable housing is an asset, but restricting the value of, say, 80 percent of the housing in a neighborhood is not a good mix.

Tim McGourthy: Worcester's downtown is primarily commercial. We're trying to encourage more residential, 24-hour activity. Right

now, the housing that will get built will be subsidized housing, and most of it will be affordable, deed-restricted units. Because of that, many retailers we hope to bring in will look at the income levels of that area and say that downtown Worcester is not the right place for them. It's a Catch-22 of trying to make an active downtown area: if you bring in the housing, you lose the retailers, and if you keep the retailers you can't do the housing because the market right now won't support the kind of housing that those retailers are looking for.

Maggie Super Church: One of the challenges we're seeing is the huge demand for middle-income housing — defined as income that is between 80 and 120 percent of the area median income. The markets are not strong enough to support it with only private capital, and the incentive programs don't, for the most part, address it. So you end up in a situation where you can make projects work for lower incomes, and the private market takes care of the higher end. And a lot of people feel caught in the middle. They don't make enough to get what they really want and need. They make a little too much to qualify for an affordable unit, and in any case, the deed restrictions are very problematic because of the inability to benefit from any appreciation in equity. And so they leave.

John Aubin: The whole affordable-housing component is one that no one wants to talk about and it probably needs to be talked about the most. My vision for Holyoke is quite simple. I think there's a huge market for mixed-use urban areas, but cultural and economic diversity are a part of that. And I think the middle income is the biggest market.

But a lot of Gateway communities are sending the message that they don't want market-rate housing, that they want lower-income housing. Is that a sustainable economy? Is that the best solution? In some ways, we've created a market that has set up two groups: one that fights only for the high end and one that









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composition flooring
and much more

fights only for the low end. Part of that is policy-driven. No one talks about this, and as a result, our policies don't address it.

Left: Bon Marche Building, Lowell; photo courtesy Higgins & Ross. Center top: Haverhill; photo by Mark Hammond. Center bottom: Springfield; photo courtesy City of Springfield. Right: Times Building, Brockton; photo by Alison van Dam, Metro South Chamber of Commerce.



Tim McGourthy: We all follow the funding. Housing programs require affordability, and each new funding source layers on additional requirements for affordable housing. So cities like Worcester, which would like market-rate housing downtown, have no tools to support that. You're trapped by state and national policies that don't necessarily address the needs of individual communities.

Maggie Super Church: We have not begun to really understand how to do housing policy well. People get nervous about housing policy, because it starts to feel like meddling with markets. How much do we let markets make decisions? We haven't begun to sort all of that out, and in the meantime, the Gateway Cities are left battling for the resources that do exist.

Elizabeth Padjen: If the Development Genie appeared right now and said you get one wish for one tool that's really going to make a difference in the Gateway Cities, what would you say?

Maggie Super Church: Uncap the historic tax credit program. There's legislation pending to take off the limits on the amount of tax credits. The state of Maryland has already done this and the impacts have been unbelievable. It's versatile, and it would affect all sectors — housing, schools, commercial, retail, for-profit,





nonprofit. The current limits make the program enormously political and unpredictable. And for the Gateway Cities, which have a tremendous historic building stock, lifting the limits would make a huge difference.

John Aubin: I'd love to see the historic tax break, but the residential tax break for me is more important because it's so broad-based.

Left: Union and Mechanic Community Gardens, Lawrence; photo by Rose Gonzalez, Groundwork Lawrence. Center: Springfield; photo courtesy City of Springfield. Right: Worcester; photo courtesy City of Worcester.











Photography Barry Halkin

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Cities like Grand Rapids, Philadelphia, and Cleveland have all used a temporary owner-occupied housing tax abatement program, or Residential Tax Abatement to bring much-needed investments to struggling areas. The RTA works by allowing mortgage borrowers to make their money go farther. This extra buying power is a critical "carrot" encouraging folks to invest in Gateway Cities. Unlike a TIF [tax increment financing district], this benefit goes to the end user, the resident, not the developer. A proposal to introduce the RTA to Massachusetts is working its way through the legislative process.

Because the tax abatement is on incremental improvements, any existing taxes will continue to be paid. Therefore, there is no cost to the city. In fact, infusing Gateway Cities with a middle-class residential population will result in an increase in commercial taxes as the live-work economy downtown grows to serve new downtown residents, as happened in Grand Rapids and Philadelphia.

Bob Ansin: I would ask my genie to allow the state and federal historic tax credits to be used not just on income-producing property, which is what the program currently allows, but also on home-ownership opportunities. Right now, incentives work against home ownership in historic buildings.

Tim McGourthy: These are all good requests. Just to add a little variety, I would ask for an improved transportation infrastructure — not just the spoke-and-wheel system around Boston but throughout the Commonwealth.

> It's hard for people who are familiar with Greater Boston to wrap their head around the scale of these cities and the scale of opportunity.
> *Maggie Super Church*

Arthur Jemison: I second all these ideas. But here's another one. I would ask to bring the Harlem Children's Zone strategy to the Gateway Cities. It's a neighborhood-based program developed by Geoffrey Canada that focuses on education and parenting programs. It has used charter schools, family social support, and longer school years with remarkable success: kids are outperforming their peers in New York City schools in math.

The physical-development side of these cities is easy; people like us can figure out how to make the dollars work. But turning around the social and educational structure of these neighborhoods — that's what could really make markets. You have to commit to it. If you had a Harlem Children's Zone in even one neighborhood in every one of these Gateway Cities, 10 years from now you'd be able to say that turning around those neighborhoods, combined with the physical improvements, new jobs, and infrastructure, made all the difference. ▪



GATEWAY TO THE FUTURE

	BOSTON	BROCKTON	FALL RIVER	FITCHBURG
POPULATION (2007)	599,351	93,092	90,905	39,835
% FOREIGN-BORN (2005–2007 AVG)	28%	24%	20%	9%
HIGH SCHOOL GRADUATION RATE* (2007)	65%	72%	57%	75%
% WITH COLLEGE DEGREES (2005–2007 AVG)	40%	16%	14%	17%
HOUSEHOLD INCOME (2005–2007 AVG)	$48,729	$50,572	$36,291	$43,828



Left out of Boston's prosperity, these industrial cities have joined forces to forge a new future.

Rethinking the Mill Cities of Massachusetts

> by **John R. Schneider**

HAVERHILL	HOLYOKE	LAWRENCE	LOWELL	NEW BEDFORD	PITTSFIELD	SPRINGFIELD	WORCESTER
59,902	39,737	70,066	103,512	91,849	42,931	149,938	173,966
8%	4%	35%	26%	21%	4%	10%	18%
74%	57%	50%	74%	64%	72%	57%	75%
29%	23%	11%	21%	13%	25%	18%	28%
$61,730	$32,650	$31,718	$47,377	$34,626	$42,930	$32,319	$43,631

Although I did not know it at the time, I was born and raised in a Gateway City. The Pittsfield, Massachusetts, of my youth was a thriving and prosperous city of just under 60,000. Up until the early 1970s, Pittsfield had a lot going for it. Downtown was a retail hub with a couple of department stores and many specialty shops and restaurants. The schools were good, and there were enough students to support three junior high schools, two public high schools, and a Catholic high school — which of course made sports rivalries both competitive and legendary. Four Little Leagues (I played in the East league) and numerous youth leagues in other sports created the talent pool that fueled the city's sports obsession. Pittsfield had a literary and cultural heritage, too. Melville wrote *Moby Dick* while living at Arrowhead, his Pittsfield farm. The Shakers established a prosperous community just over the city's western border. Many famous writers and artists settled in the Berkshires — "America's premier cultural resort" — and Pittsfield was, and still is, the center of it all.

But what made Pittsfield really prosperous and wealthy were jobs, and those jobs were at General Electric. GE's plastics, transformers, and ordnance plants were in the city, and they employed thousands. My dad was one of them. He came to Pittsfield in 1955 to work in the ordnance plant and soon married, started a family, bought a house, and then bought another (where he still lives), successfully pursuing the American Dream. I never knew exactly what my father did for a living, other than it involved submarines and the nation's defense during the Cold War, but it was a good job that paid good wages, and that's all that mattered to a growing family of seven. In short, Pittsfield had everything needed for blue- and white-collar families to feel good about themselves and their community, and for merchants and the professional classes to live the good life as well.

And then GE closed or relocated its local operations, leaving behind only one unit, which was sold in 2007 to a Saudi conglomerate that today employs fewer than 300 people in town.

Source: MassINC. *High school graduation rate includes students requiring additional fifth year.

These cities offer extraordinary opportunities for smart growth, affordable housing, and the workforce — three significant challenges facing Massachusetts. Built during eras of prosperity, they feature walkable downtowns and attractive housing, as well as transportation and cultural infrastructure.

> ***What is a Gateway City?*** Although they share attributes with many mid-size, post-industrial cities, the Gateway Cities are defined as 11 formerly prosperous mill cities in Massachusetts: Brockton, Fall River, Fitchburg, Haverhill, Holyoke, Lawrence, Lowell, New Bedford, Pittsfield, Springfield, and Worcester. What distinguishes them from other former industrial cities in the region is their size — between 35,000 and 175,000 — and the fact that they lie outside the immediate economic influence of Boston.

In 2007, MassINC, a nonpartisan think tank that focuses on the goal of promoting the growth and vitality of the American Dream in Massachusetts, worked with the Brookings Institution to study the needs and challenges of these cities, which had been left out of the growing prosperity of the Greater Boston region. The "gateway" name was selected, not only to suggest the opportunity that these cities represent and their role as regional centers, but also to reflect the fact that most of these communities are home to many recent immigrants.

The resulting report, *Reconnecting Massachusetts Gateway Cities: Lessons Learned and Agenda for Renewal*, documented job losses, rising poverty, and weakening educational attainment — the results were not surprising. But in a state like Massachusetts, a national leader in per-capita income and educational attainment rates, what was shocking was the increasing concentration of poverty in the Gateway Cities. Representing just 15 percent of the state's population, these 11 cities are home to 30 percent of the state's poor. As Greater Boston was booming, the rest of Massachusetts was having a hard time connecting to the source of our wealth: the knowledge economy. Between 1970 and 2005, while Greater Boston added 467,000 jobs, the Gateway Cities as a group lost more than 11,000 jobs. Since the 1960s, the Gateway Cities have lost 134,000 manufacturing jobs, one-third of the state's total decline in such jobs.

At the same time, the Gateway Cities have received a disproportionately low share of state-level support. Year after year, Massachusetts has invested more than half a billion dollars in a variety of incentives to attract and retain businesses, but less than 5 percent of those dollars has gone to programs that draw companies to economically distressed areas like the Gateway Cities. Tax credits intended for "Economic Opportunity Areas" in distressed areas have been diverted to EOAs in "distressed" communities such as Lexington and Bedford.

And yet, these 11 cities offer extraordinary opportunities for smart growth, affordable housing, and the workforce — three significant challenges facing Massachusetts. Built during eras of prosperity, they feature walkable downtowns and neighborhoods with attractive, low-cost housing stock; many have transportation and cultural infrastructure already in place. Many also have growing immigrant populations eager for jobs, as well as culturally and socially rich urban environments that can attract young workers and middle-class families.

Since the report was published, several significant new initiatives have already been launched to help the Gateway Cities compete by attracting more private-sector investment and reforming state policy. The chief executives of all 11 cities signed a compact in May 2008, agreeing to work together on economic and community development; the 11 economic development directors meet regularly as part of an economic development "roundtable." UMass Dartmouth has established the Urban Initiative Center to expand the university's involvement in the economic and social development of Gateway Cities. MassINC itself has embarked on focused initiatives with individual cities, such as the Springfield Growth Strategy — a plan for the long-term economic growth of the city.

Other efforts address legislative and policy concerns. The Gateway Cities Legislative Caucus, which includes legislators from districts in each of the 11 cities, has filed a bill entitled "An Act to Promote Economic Development in Gateway Cities," which would expand the state's Historic Tax Credit Program, provide resources for market-rate housing development, and enhance the state's Economic Development Incentive Program. Governor Patrick's administration has established two grant programs for the Gateway Cities, one for housing and one for urban parks.

And the Gateway Cities "brand" is sticking, at least partly because of the opportunity that the term suggests. The Gateway Cities represent an industrial heritage that helped to make Massachusetts prosperous, but they also symbolize a legacy of opportunity — the chance that, through hard work and some luck, the American Dream is accessible.

Each of the Gateway Cities is home to families with stories like mine. After I graduated from Pittsfield High School in 1975, I moved to Boston, then to Chicago and on to Haverhill, before finally settling down and buying a house in Lowell.

Today I live in an ethnically and economically diverse neighborhood; some people might call me an "urban pioneer." My home is a modest, 1920s four-square. Across the street is a family that represents the best of what this country is all about. Refugees from the Cambodian genocide, they settled in Lowell after barely escaping with their lives. Over time, they bought a house, with several generations living together to save some money so other family members could also buy a house. The kids went to school and learned English, becoming new Americans while holding onto their family's cultural heritage. Some are now graduating from the city's community college, and some are getting married (often in the traditional Cambodian way, which includes three days of celebration). They all work, often at more than one job, and they pool their resources to get ahead. It is no accident that this family, and many like them across Massachusetts, live in a Gateway City.

I have a soft spot for scrappy places that won't quit. Lowell is like that — but so is Pittsfield, and so are the rest of the Gateway Cities. We ignore them at our own peril. These cities won't quit and we should not quit on them. We know what we need to do. Do we have the will to do it? ■

John R. Schneider is executive vice president of MassINC in Boston. For more information on the Gateway Cities Project, go to: www.massinc.org.

JOBS

Many Gateway Cities are holding on to manufacturing jobs. In 2003, more than 25 percent of private-sector jobs in Fall River, Lawrence, and New Bedford were still in the manufacturing sector. In the 1980s, the number of manufacturing jobs in the Boston Metro area (as a percentage of private-sector jobs) dipped below 25 percent.

IMMIGRANT POPULATIONS

Some of the Gateway Cities have long been home to large immigrant populations, although their countries of origin have varied widely.

Today, approximately 70 percent of Lawrence's immigrant population is from the Dominican Republic, while approximately 70 percent of New Bedford's immigrants are from Portugal. Brockton and Fall River's immigrant populations both comprise approximately one-third from Cape Verde and one-fifth from Haiti.

Lowell's immigrant community is even more heterogeneous: Cambodia (24 percent); Portugal (10 percent), India (9 percent), Brazil (9 percent), Vietnam (6 percent), Colombia and Thailand (5 percent each), Dominican Republic and Laos (4 percent each).

POVERTY

There is a high level of concentrated poverty in some of the Gateway Cities: 34 percent of Springfield's and 51 percent of Holyoke's poor live in "high poverty" neighborhoods. By comparison, New Orleans had a concentrated poverty rate of 38 percent on the eve of Hurricane Katrina.

POPULATION GROWTH

Population growth and decline has been uneven in the Gateway Cities. Between 1960 and 2000, Lowell grew by 14 percent, while Brockton's population grew by 30 percent and Haverhill by 31. During the same period, Pittsfield and Holyoke lost 21 and 24 percent of their residents respectively. (Boston experienced a 15 percent decline in population.)

GATEWAY PLUS

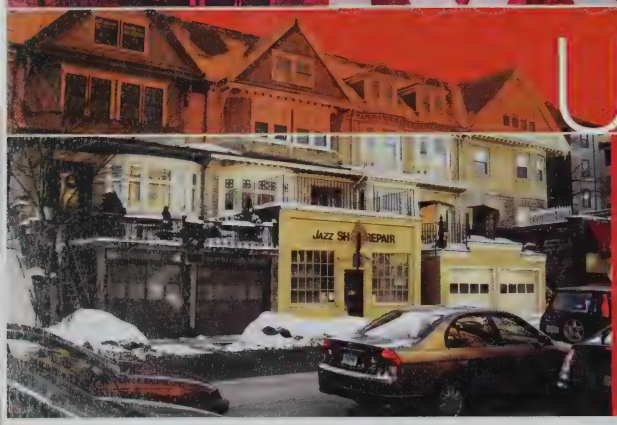
In addition to the 11 Gateway Cities, 12 communities that share similar concerns and that also play roles in the state's smart-growth strategies have been designated "Gateway Plus" Cities by Governor Deval Patrick: Barnstable, Chelsea, Chicopee, Everett, Leominster, Lynn, Malden, Methuen, Revere, Salem, Taunton, and Westfield.

Source: MassINC.

RADICAL URBANISM

The Case for Mom and Pop

by **Matthew Frederick RA**



"You can't decide ahead of time what activities you want to see. Economic life is full of surprises, and if you decide what you're going to base your economy on — what do you have to think about? Things that already exist. You're ruling out innovation right away, and yet innovation is of the essence for a live and prospering economy."
— Jane Jacobs

It is easy to believe that we live in an enlightened era of urban planning. The arrogances of 20th-century Modernism are behind us, the suburb has become everyone's favorite whipping boy, and the cityscapes on our drawing boards are humane and engaging. We have developed a remarkable array of resources to promote and safeguard the urban condition. From historic-district protections to smart-growth policies, architectural review boards to community-development block grants, Main Street Programs to affordable-housing regulations, and the Gateway Cities Program to whatever comes next, there seems little reason to doubt that we are on our way to realizing the rich urbanism in our mind's eye. It is one of walkable streets, human-scaled architecture, charming sidewalks, and mixed-use vitality. We have come a long way from towers-in-a-park to this.

And yet our sophistication may be leading us away from asking some essential questions about the urban problem. Such as, why are we beholden to so many costly programs and regulatory procedures when nothing of the kind was needed to build our favorite urban centers in the first place? (The Main Streets that the Main Street Program emulates, for example, were not products of a Main Street Program.) Why are new projects built in our downtowns nearly always inferior to their predecessors — over-scaled, under-inspired, and easily written off with what-else-can-we-do resignation? And why can't Mom and Pop find a meaningful place in the new mixed-use city?

The answers are not flattering, for they suggest an urban planning establishment that has become invested in a dysfunctional process that forbids mixed-use urbanism from emerging organically, begetting the need for top-down, professional intervention. This has perhaps done a lot to advance urban planning, but it has done very little to advance urbanism.

Urbanism, interrupted

At the intersection of Washington and High Streets in Haverhill, Massachusetts, lies an important clue as to what went wrong with American urbanism decades ago. Here, as in many neighborhoods in New England, a not-quite-realized urbanism has been preserved in a state of arrested development for nearly a century. The landscape is familiar: unprepossessing one-, two-, and three-family houses, scattered apartment blocks, walkable if not fully hospitable streets, and the occasional corner store. At Washington and High, the Kwike Market and Benedetti's Deli, located on the ground floors of two houses, provide the commercial punctuation marks.

Because the mixed uses here are so modestly developed, their unglamorous origin is apparent: some local citizens opened businesses in houses. The originator of the Kwike Market perhaps first opened a tobacco shop in his living room; later, he added comestibles and took over the entire floor. Maybe the owner of the two-family house opposite couldn't find a renter, so his brother-in-law opened a food business in the first-floor apartment. Decades later, both establishments continue to thrive.

All photos by Matthew Frederick RA.



Whatever the particulars, the lesson is near-universal: mixed-use urbanism naturally arises when citizens turn living rooms into stores, dining rooms into hair salons, kitchens into taquerías, and garages into cabinet shops. Historically, as home-based businesses have pushed toward the sidewalk with additions and display windows, mixed-use streets and even downtowns have emerged. This ad-hoc model allowed citizens of even quite modest means and difficult life circumstances a natural path to economic success and self-actualization. A frustrated desk clerk could get a rent-free shot at owning a secondhand bookstore in his garage. A woman laid off from the factory could hang out a sign and sell muffins and coffee to her neighbors the next day. A high-school dropout could generate income by mending clothing for her neighbors in the family basement while caring for her newborn daughter.

Around the turn of the 20th century, emerging health, building, and zoning codes began to change this landscape. Few would-be entrepreneurs could afford to adapt their homes to the new codes, which grew increasingly stringent, or to rent separate commercial spaces; and zoning laws forbidding new businesses in or near residences made many such efforts moot. Mom and Pop have been sitting on their hands ever since, waiting for the professionals to make urbanism happen. Meanwhile, with fewer new small businesses arising, commercial growth has tended to find its outlet through cataclysmically large projects — on the suburban periphery and sporadically in otherwise dormant city neighborhoods.

Urbanism is in the details

Planners and policymakers rightly desire to close the prosperity gap between the region's smaller cities and Boston. But to the extent the problem is framed this way, we risk pushing our small cities to become more like Boston. Anyone who has observed Boston urbanism of late — badly scaled buildings going up everywhere, independent businesses succumbing to chain stores, Newbury Street growing bland and cloying, an enormous strip mall being inserted into South Bay, poor and middle-class residents being priced out of their neighborhoods — has to wonder how this can be a good direction to pursue.

What is needed in our cities is a strategy that is authentic, that is rooted in the particulars already present in them. Our choice is simple: We can continue to funnel growth toward oversized projects conceived by strangers and visited upon us in spasmodic bursts, or we can once again allow incremental commerce to be initiated in our neighborhoods by people we know. We can continue pretending that megadevelopments are unavoidable and that architectural review boards are needed to assure compatibility, or we can begin the harder but more rewarding work of making a human-scaled *culture*, out of which human-scaled buildings will emerge naturally.

The seeds of this new culture lie where they always have — in the home. Its cultivator remains the home-based entrepreneur. It is perhaps hard to believe that answers to the enormous problems we face lie in so modest a place. It can be easy to dismiss home business as a mere detail in the complex urban system. But this is like saying that DNA is a mere detail of biology, when it is its essence. Home business is not simply a detail of urban culture; it is its DNA.

Urbanism, resumed

The changes needed to rediscover incremental urbanism are, perhaps ironically, considerable. Zoning districts should be reorganized by *intensity* rather than *use*: Similar intensities such as small stores, hair salons, repair shops, offices, daycare facilities, and even some forms of light assembly should be freely combinable with residences, by right. Residential-only districts should be the exception.

Regulatory codes need to be reformed to allow graduated



compliance. A new home business could be given perhaps five years to provide ADA-compatible ramps and toilet facilities. A home restaurant under a specified size could forgo costly, code-standard appliances if reasonable health practices are demonstrated. Old buildings — particularly those that are owner-occupied — could be forgiven expensive earthquake code upgrades if their nonconforming status is openly advertised.

The biggest adjustments will be psychological. Many will find it difficult to live in neighborhoods that will be constantly evolving. Confrontations will arise, even among those who stand to benefit. But one day, a sea change will indeed occur. A resident of a struggling city will stand up at a community meeting to object to a neighbor seeking to open a bicycle shop or taco stand in her home. And that resident will be hooted down for what he or she is: one who stands *against* the community, who wishes to send local money away, who prefers that her neighborhood remain creatively and entrepreneurially stagnant.

Fear of change will — and does — permeate the profession, too. Many planners and policymakers see no need for change, and claim that a boom in home businesses is already underway. Yet the "live-work" model with which so many are fascinated is directed at clean-hands enterprises — web design, business consulting, and the like — which are invisible to the street. Such is not an *urban* notion of business, nor is it one that accommodates citizens living outside the boundaries of privilege.

Others believe that a "creative economy" is already transforming our urban centers with a genteel gallery culture. But this co-opting of "creative" insults the would-be shop owners and laborers and workers denied their own opportunities to create. As for the "real" economy, unimaginative policymakers will continue to define economic development as the attracting of chain stores, even though any chain store that turns a profit by definition removes more money from a locality than it returns to it, regardless of what it pays in salaries and local taxes.

Learning to let urbanism happen naturally once again will be the hardest part. The desire to control, to manage, to predict outcomes on a grand scale will be taken from us. This means that a lot of people will need to put egos aside and stop being impressed with big plans to solve the urban problem in our lifetime. We need to invest in the long road, in a process that will go on long after us. And isn't this — the possibility of permanence, the opportunity to participate in something that transcends us — the reason we are drawn to the urban endeavor in the first place? ■

Matthew Frederick RA is the principal of Frederick Design Studio in Cambridge, Massachusetts. A registered architect and an urban designer, he is the author of *101 Things I Learned in Architecture School* (MIT Press, 2007) and is working on a new book, *Radical Urbanism*.

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Greetings from ***Our*** Holyoke



YOU'VE SEEN THEM — the ubiquitous, glossy rectangles tucked into spinning racks at tourist sites and convenience stores across the globe: the *Important Monument*, the *Historical Site*, the *Beautiful Park*, the *Famous Building*. Postcards provide the images that depict a sense of place. Or do they?

When cities are represented as a collection of glossy images, much is left out. Day-to-day experiences and places that shape regular lives are overlooked. And yet, as photographs, postcards are also a uniquely accessible public-art form. But they're rarely intellectualized or critiqued, and often for good reason.

The intersection of these two observations generated the ongoing public-art project called "Greetings from MY City," which celebrates the diversity of a city's unique people and places through a series of new postcard designs. In an effort to engage the communities at the heart of this exploration, young students are given disposable cameras to create photo essays that depict the spirit of their communities. Whether defined by racial identity, architectural style, urban density, landscape, class, or culture, the home neighborhoods of these students include places rarely, if ever, seen in conventional tour guides or postcards; often these neighborhoods are entirely left off the map.

The students learn about cameras, composition, and careful observation. They learn about their city through mapping exercises. They discuss their own special places, and the public's perception of those places, as projected in the media and reflected in community services. Only then do they venture out to document their neighborhoods. Afterward, through a guided process, they select photographs to be printed as postcards, honing their graphic skills and exploring how ideas are conveyed through visual media. Their selections are then curated by the project directors, who also design the message area of each card to include a full city map and a caption identifying the student photographer.

What results is a series of real postcards, sold in stores throughout the city. More profound is the resulting sense of ownership and pride in the community's uniqueness — a pride shared by the student photographers and by the residents who view and use these cards.

The images included here reflect the most recent workshop with a sixth-grade social-studies class at John J. Lynch Middle School in Holyoke, Massachusetts. Additional projects have been undertaken in Boston and are in development in Springfield, Massachusetts; San Francisco; and Washington, DC.

Gretchen Schneider AIA and **Erika Zekos, Assoc. AIA** are the founders and directors of the "Greetings from MY City" project. The project has been funded by grants from the Boston Foundation for Architecture, the Kahn Institute at Smith College, and the American Institute of Architects Blueprint for America Project through Western Mass/AIA; it has also benefitted from collaboration with Citizen Schools and the South Boston Fourth Presbyterian Church Music and Art Program.

A school-based public-art project explores overlooked places.

> What could be more important to the community than the way their youth see that community?
>
> *Ronnie McCoy*
> *Sixth-grade social-studies teacher*

Color photographs, clockwise from top left: John; Tylasia; Jose. All grayscale photos courtesy the authors.















Color photographs, clockwise from top left: Veronica; Amber; Veronica.





Color photographs, clockwise from top left: Jordyn; Bianca; Alexandria.

















Color photographs, clockwise from left: Amber; Jose; Madaline.





The Real Deal

Re-inventing the Post-Industrial City

Adam Baacke AIA Jeff Stein AIA

Lowell, Massachusetts, the city that was once the largest industrial city in the country and the largest producer of textiles in the world, knows what it means to be "post-industrial."



Adam Baacke *is the assistant city manager of the City of Lowell, where he also serves as director of the Division of Planning and Development. He received a BA from Cornell in American History and, after serving in AmeriCorps, he received an MS in Public Affairs from University of Massachusetts Boston.*



Jeff Stein AIA *is head of the School of Architecture and dean of the Boston Architectural College and is the architecture critic for* Banker & Tradesman.

Jeff Stein: Lowell is a city that is thriving because it is an industrial-history museum, but at the same time, it seems to be trying to escape that history and become part of the new post-industrial economy. It's as though there is Lowell the museum place, and then there's Lowell the real place.

Adam Baacke: It's actually not a museum place. It's a real place that happens to highlight and celebrate its history and heritage. But there is no doubt that the city has benefitted greatly from the investment that has come since the Lowell National Historical Park was established in 1978 — not only in terms of hard dollars, but also in terms of intellectual capital and a new way of thinking about the city.

Richard Florida and others have written about the creative class as the resource that drives economic activity today. One of the things that the creative class is attracted to is an authentic urban experience — a wonderful built environment, but also the kind of activity that comes with an urban setting. Today, in many parts of the country, you see people trying to replicate the very environment that Lowell was able to preserve. So in a sense, the national park gave us an extraordinary resource for attaining success in a new economy that is completely different from the economy that the city was originally built for.

Jeff Stein: One difference is that this new post-industrial economy doesn't have roots here; it started elsewhere and presumably could find a home almost anywhere.

Adam Baacke: There is some truth to that, but what's going on here today is actually more organic than what occurred when Lowell was first founded. Lowell is a city only because of capital investment by private investors who decided that this was a good place for a city. And it all traces back to a natural feature: a sizeable drop in the river at a bend where they could harness the water power for the mills. They created a city around that, in order to provide the labor force to run and operate those mills. It was 100 percent a planned city.

Jeff Stein: And now you have to retool that city for a new economic environment.

Adam Baacke: Right. If communities like Lowell don't plan and have a meaningful strategy to respond to current realities and potentials, they face the threat of obsolescence.

Jeff Stein: So what is your strategy?

Adam Baacke: We're trying to build on the demographic realities in America today, which include an expected substantial growth in the number of households over the next couple of decades. The traditional nuclear household will likely not grow at all. The growth areas are expected to be retiring baby-boomers; younger echo-boomers, who are the people just starting out now as singles or couples; and immigrants. Those three groups have traditionally had an interest in urban settings. As a result, there is an extraordinary opportunity for places like Lowell that have urban authenticity.

If we're attractive to just 10 percent of the people in each of those demographics, we have a recipe for the continued growth of the city. And in this economy, which is driven by the skills and capacity of the workforce, that also means we are

cultivating a key resource, in much the same way that in the early 20th century, water power was the resource that drove decisions on locating businesses and economic development.

Jeff Stein: Do you have indications that this strategy will be successful?

Adam Baacke: The best standard I can think of for measuring the success of urban revitalization is looking at the transformation of vacant property into productive use. Since 2000, Lowell has brought 2.6 million square feet of formerly vacant buildings back into active, productive use, just in our downtown alone. And that effort continues; we have projects like our Hamilton Canal District project, which will redevelop another 300,000 to 400,000 square feet and complement that with another 1.6 million square feet of new construction downtown.

Jeff Stein: What effect has the recent economic downturn had on that?

Adam Baacke: We are fortunate with respect to the Hamilton Canal project. First of all, it's a long-term, 10-year project, so what's going on in the economy this year isn't what will be going on in year 10. The developer is still very bullish on the long-term trends. The biggest challenge for doing development right now appears to be attracting debt financing. And fortunately, for the first phase of this project, which is the restoration and reuse of the historic mill property, historic-preservation tax credits as well as low-income housing tax credits are the dominant components of the financing package. While it's become harder to sell the tax credits — the idea is that you turn around and sell them to parties who have income that they want to write off on their taxes — it's actually easier to obtain them than it is to obtain debt financing right now.

Jeff Stein: I would guess that one of the challenges you face is getting properties on the tax rolls that generate property-tax revenues. Lowell has a state university, a community college, the usual religious institutions, and a federal national park — that's a lot of acreage that is not generating revenue.



Adam Baacke: We definitely have our share of tax-exempt properties in the city. Most of those entities, though, represent a significant benefit to the city in that they create other tax bases that may offset some of the property that they take off the tax rolls. The national park is unique in that very little of the land that is designated as the national park is actually owned by the National Park Service. It owns a parking lot and a couple of museum buildings. The balance of the national park is privately owned, fully taxable, and is developed privately. But we find that institutions such as the hospitals and the colleges create a lot of economic benefit for the city as major employers. In many ways, they're less recession-prone than some private employers, and that tends to provide stability.

^ **Hamilton Canal District (above and page 46). Renderings courtesy ICON Architecture/Bondy.**

Jeff Stein: I noticed that the public schools here look pretty good. Several of them are new or have been renovated in the last decade or so.

Adam Baacke: We appreciate that you've noticed! Lowell's school department started a very aggressive school-building program in the late 1980s that continues today. Cities are only as healthy as their neighborhoods, and when you think about the role of city government in neighborhoods, there are three things that are most important. One is educating children: providing high-quality facilities and education. Another is public safety. The third is providing parks and public amenities. And over the last couple of decades, the city has put a lot of emphasis on all three. We have literally rebuilt almost every school in the city and have been restoring and enhancing our parks, leveraging state grant money in both cases.

One of the things that hindered Lowell in the early 1990s was a real and perceived crime problem. But between 1994 and 2004, with the implementation of a very aggressive community policing program, the city actually experienced the largest drop in crime of any city of its size in America. And we've been able to maintain the very low levels of crime that we reached in 2004. That's created a sense of safety and security in our neighborhoods that ultimately makes them more attractive and livable places.

Jeff Stein: Lowell is one of Massachusetts' 11 "Gateway Cities," so defined in a study by MassINC and the Brookings Institution "because they are at once gateways to the next era of the state's economic success and key portals for their diverse, often foreign-born residents' ongoing pursuit of the American Dream." Is that something that is high on the radar of planning and community development here now?

> Cities are only as healthy as their neighborhoods, and when you think about the role of city government in neighborhoods, there are three things that are most important: educating children, public safety, and parks and public amenities.
> *Adam Baacke*

Adam Baacke: We look at it in two respects. One is the role that Lowell played in its industrial heyday, and continues to play, of being a gateway to immigrant populations coming into the country, giving them a place to establish a foothold. During the last century, the Irish, Greek, and Portuguese immigrants created ethnic neighborhoods where the entrepreneurs among them established businesses that catered to their populations, enabling them to achieve a sense of the American Dream. The same thing is happening today with the Cambodian, Brazilian, and African immigrant populations here. We're seeing the same kind of communities form, which create and strengthen their own entrepreneurs within them. Lowell is very much the kind of place where that can happen. It's a place where you allow for the mix of land uses and the mix of activity and the mix of people, the kind of dynamic that only can happen in urban places, that allows that type of entrepreneurship to bubble up.

It's also an accessibly priced community, so for people who are just starting out, whether that means starting a family or starting out in this country, this is a place to find housing they can afford. What's important is that while many do move to other places as they attain levels of success, many others who become successful stay in Lowell, are committed to the community, and become civic leaders. One of the tenets of our master plan is to foster that sense of the lifetime city.

Jeff Stein: What do you mean by "lifetime city"?

Adam Baacke: Regardless of your stage of life or your income level, you can find a neighborhood, a type of housing, and the amenities associated with your lifestyle that will be satisfying and compelling somewhere here in the city. We are not fooling ourselves into believing that everyone will follow that path, but we do believe that no matter where you are in life, if you are interested in being in an urban environment, you can find a place here in Lowell. That kind of diversity is part of what's important in the overall sustainability of the city. Similarly, we are striving for economic diversity and are not focused on any one industry — that may be great for a while but it can also decline precipitously, as we saw with the textile mills. We also feel it's important that we do not become merely a bedroom community or merely an attractive retirement city, because something could change in demographic or economic factors that would make us vulnerable again.

Jeff Stein: Tell me about the Hamilton Canal project. It's something of a latecomer to the Lowell renaissance — why is that?

Adam Baacke: There are several reasons. First off, until recently, two major industrial users were still operating in that area. The nature of their operations, combined with the canal system, turned their sites into a physical barrier between the core of the downtown and the rest of the city. The Hamilton Canal District is a 15-acre parcel right in the middle of the city that tens of thousands of people drive by every single day. But people barely even knew it was there. The other impediment was that the balance of the district was owned by some land-owners who had exhibited little effort to do any sort of redevelopment; much of it was characterized by decades-long vacancy and severe under-utilization.

Jeff Stein: How did you manage to change the minds of those land-owners?

Adam Baacke: In some cases, we were able to negotiate sales; in those cases, the land-owners recognized that this was probably the best opportunity for them to make some money on their property. But in many cases, we had to use the power of eminent domain. The project was catalyzed when the Freudenberg Nonwovens



Lowell is a "lifetime city" — regardless of your stage in life, you can find a neighborhood, housing, and amenities that will be satisfying.
Adam Baacke

Company announced that it was closing its operations here and moving them to North Carolina and China. Freudenberg officials approached the city, saying that they had always prided themselves on being good corporate citizens and wanted to know what they could do to continue that even as they were closing. We realized fairly quickly that the best thing they could do was to sell us their property. And they agreed to do that at a discount below its assessed value, and to also take responsibility for some of the necessary environmental clean-up. That created the opportunity for us to combine that site with surrounding land that we either already owned or had the power of eminent domain to assemble.

Hamilton Canal is designed to be a model public-private partnership. People throw that phrase around a lot, but in this case, we asked a simple question: If we want to see revitalization in this part of the city, what are the things that the public sector can do better than the private sector? And vice versa.

Jeff Stein: And one of the things you could do well was amass the land at a lower cost than a private developer might be able to do.

Adam Baacke: I'm not sure that, in the absence of the eminent domain authority, any private developer could have assembled the land, at any price. So land assembly was a huge piece. The second piece was addressing both the real and the perceived threat of environmental contamination, which could scuttle the possibility of redevelopment. We've actually done a fair amount of clean-up already, and worked out a deal with the developer to discount the purchase price by whatever the real costs of environmental clean-up turn out to be.

The third piece that the public sector could take on was the issue of permitting. Typically, a developer designs something and brings it to the community and the community says, "OK, but here are all the steps you have to go through so we can evaluate whether we like the project or not." And that is fundamentally backwards. With the Hamilton Canal project, we decided to try flipping that mechanism around and said, "Let's begin by bringing the developer in and jointly, with the public at large, creating a vision for what this district is going to be."

We now have a true consensus master plan that everybody feels is the right plan for the district. What we did in exchange, which is the promise we made to the developers that made them willing and interested in undertaking this 13-month process, was to zone this with a form-based code that will allow them to build by right, as long as they build to this master plan.

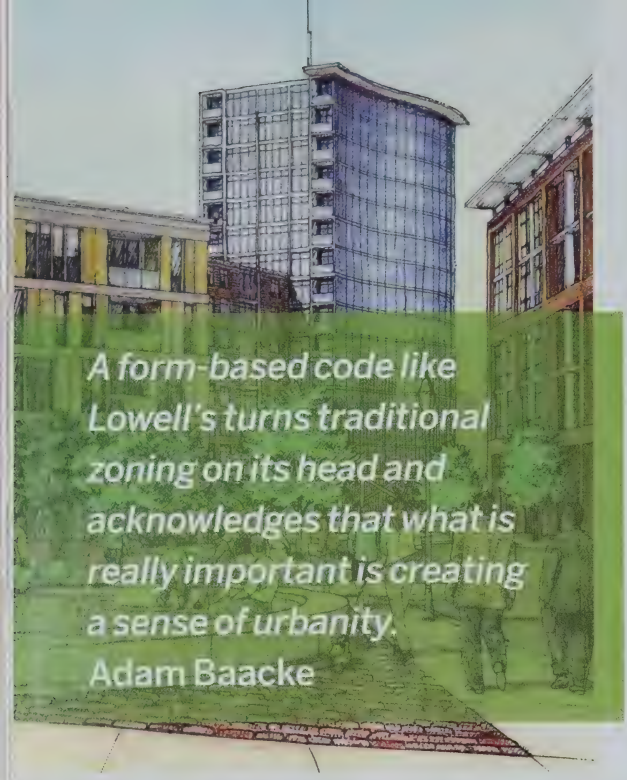
Jeff Stein: What does it mean for Lowell to have a form-based code?

Adam Baacke: Traditional zoning, at least in this country, is primarily use-based. You begin by drawing boxes on a map and designating allowed uses for each of them — industrial here, residential there, some commercial in the middle, maybe a few mixed-use zones if you're really progressive. After that, you might add some requirements for, say, parking, setbacks, and minimum lot size.

A form-based code turns that on its head and acknowledges that what is really important is creating a sense of urbanity. And urbanity has a lot more to do with creating a physical public realm than it does with separating all the uses. In fact, bringing the uses together actually helps to create urban vibrancy.

So our form-based code outlines a very broad range of allowed uses; we're willing to let the market figure that out. What we do regulate is the relationship between the privately developed buildings and the public realm of the streets and the parks and the sidewalks. The actual architectural design is not regulated by the code, and we don't think that it should be. Because it's in the

^ Hamilton Canal District. Courtesy ICON Architecture.



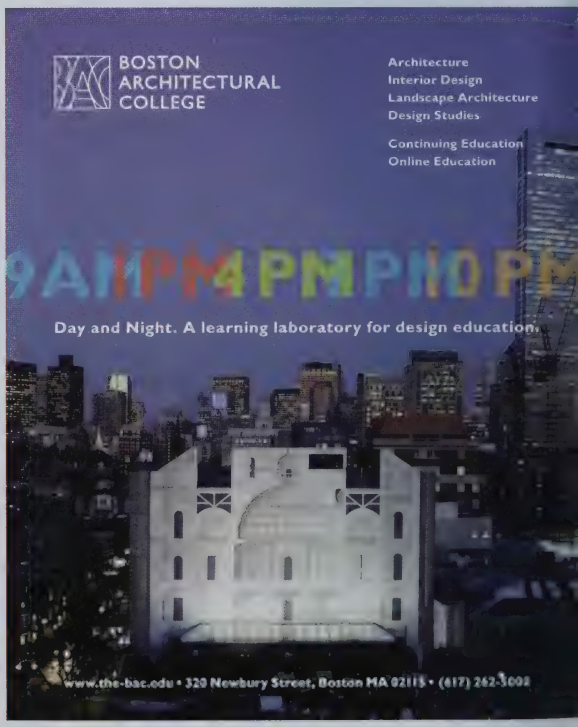
national park area, we do have a historical board that is interested in architecture from the point of view of its consistency with the overall historic character of the national park. But we're not dictating what the architectural style needs to be.

Jeff Stein: So, for example, the code might say the building should be within so many feet of the sidewalk line.

Adam Baacke: We go even further. We say it must be right on the sidewalk line, because that's the line that creates the sort of street wall that contributes to the urban form. There are three components of the form-based code that help to ensure that you get that urban scale and form. The first is that every parcel has a minimum lot coverage, so you can't build a small building in the corner of a lot surrounded by a sea of parking, which is a very suburban approach. The second is height. We ensure both a minimum and a maximum height, so you can't build a single-story building. We want buildings that are consistent with the typical heights of the historic urban downtown in Lowell, which are in the four- to six-story range. And then there are the build-to lines. Traditional zoning codes include setbacks, which say you have to be at least this far from the property line or this far from the sidewalk, but you can be even further away if you want. That does not contribute to a vital public realm.

Jeff Stein: Some people have argued that the trend toward mega-projects by single developers has also deadened our cities, as we





move away from the previous pattern of more incremental development. Have you given thought to that issue?

Adam Baacke: Yes. The Hamilton Canal District has a master developer, Trinity Financial, working with a design team led by ICON Architecture. The city will convey land to Trinity at each phase, retaining ownership of parcels that are not ready for development as an extra hedge against any problems with the project; we'll still have that resource of the land and the ability to move ahead in the future. But Trinity has the right to either develop the parcels itself or convey the parcels to other developers. And in fact, that may happen with one of the two properties in phase one. By allowing different developers, there will be many different design eyes applied to this project over the next 10 years. And as a result, we hope to end up with a more organic development pattern and aesthetic.

Jeff Stein: In the last 20 years, we've seen an unevenness in the Massachusetts economy: Greater Boston gained more than 400,000 new jobs, while the rest of the state actually lost jobs. In the same period, we developed 90,000 acres of untouched land around Greater Boston alone. In order for the state as a whole to thrive, places like Lowell have to thrive.

Adam Baacke: That pattern of sprawl development is not sustainable. And that simple fact creates a fantastic opportunity for places like Lowell, which already have the physical infrastructure from their history as employment centers as well as residential centers. As we see dwindling energy supplies and increasing costs, people are going to be forced to make some different decisions about how we grow. And places that are already centers of mixed-use activity served well by transit are likely to be the beneficiaries of that changing dynamic.

> Sprawl development is not sustainable. And that simple fact creates a fantastic opportunity for places like Lowell, which already have the physical infrastructure. *Adam Baacke*

Jeff Stein: So when planners talk about smart growth, they're really talking about Lowell. There isn't any kind of growth that can happen in this town that isn't smart, is there?

Adam Baacke: Smart growth means many things to many people. Lowell welcomes development that is beneficial to the city in terms of strengthening the economy of the city, strengthening the sense of urban vitality, and enhancing the established character of the city and its neighborhoods. We strive to achieve all three of those things—and in Lowell, that's smart growth. ■

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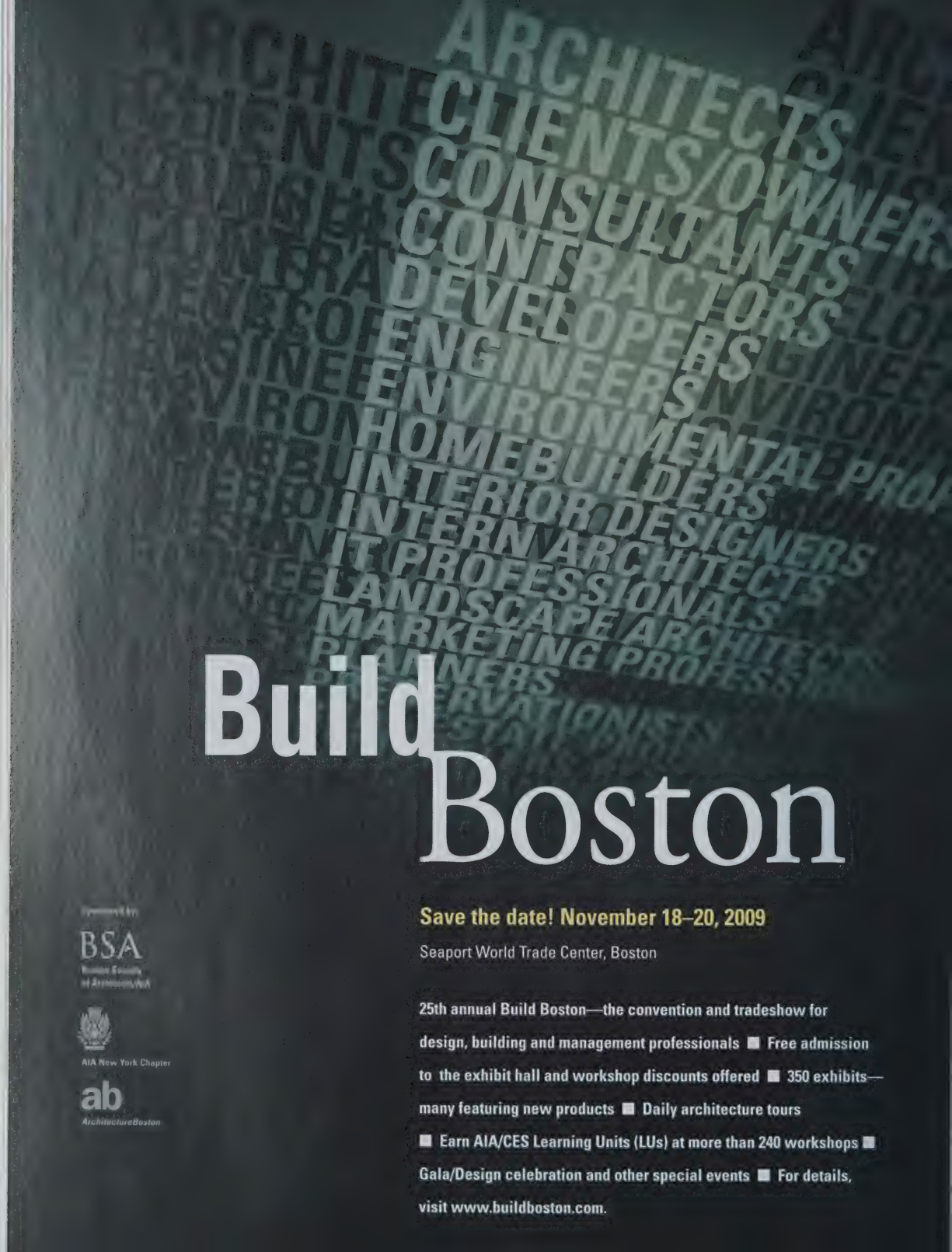
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Covering the Issues

Recession, Depression, "Restructuring"... Whatever we're in, Richard Florida describes how "The Crash Will Reshape America" in ***The Atlantic*** (March 2009). In this latest development of his "creative class" ideas, Florida argues that "place still matters." He suggests that the crisis today is akin to the Long Depression of 1873–1896, through which the New England mill towns of Lowell, Lawrence, and Springfield eventually gave way to the giant factory cities of Pittsburgh, Cleveland, and Detroit. Now, Florida foresees idea-driven "city-regions" — such as the Boston-New York corridor — fueled by creative talent and ambition, which will feed off each other and spur ever-faster growth. Density will be good for long-term success. Likewise, he argues, sprawl has reached its limit. Florida writes that "Suburbanization was the spatial fix for the industrial age — the geographic expression of mass production and the credit economy." Some regions will now need to shrink, and that's part of this evolution.

Happy Birthday, *TOH*... Just 30 years ago, during a different housing crisis, WGBH launched a TV show that explained to viewers that they didn't need to buy new homes to be happy, and that renovating an old house could be pretty darn entertaining. WGBH also believed that a population of informed home renovators could only be a good thing. Though Julia Child had set the scene for do-it-yourself programming, the first Home Depot was still a few months from opening in Atlanta. Pre-HGTV, pre-*Home Improvement*, pre-*MTV Cribs*, pre-*Extreme Makeover Home Edition* — can you imagine? In ***Boston*** magazine (February 2009), Francis Storrs presents an engaging oral history of how *This Old House* tiptoed into new territory in February 1979, and changed the renovation world forever.

Stressed Out?... "Who Says Stress is Bad for You?" challenges Mary Carmichael in ***Newsweek*** (February 23, 2009). Believe it or not, some stress — even difficult stress — "properly handled" can provide long-term benefits. Dr. Anthony Komaroff offers a companion piece on the "oversold" link between stress and disease, while Ben Sherwood explains the intense special training of elite military forces, and why they thrive under stress better than the rest of us. With a stalled construction industry, layoffs, and a downright dismal architectural climate, this all may simply add to your anxiety. Then again, this series of articles might provide a different outlook — or at least a positive distraction.

Home Sweet Home... Sometimes the problem isn't financing; sometimes it's what you can get for that financing. Case in point: Rural Studio — Auburn University's renowned design/build program in Hale County, Alabama — which runs an outreach program. Pam Dorr was an outreach student, trying to help elderly widows fix homes that were beyond repair, baffled that these women couldn't get loans for new ones. In fact, she discovered they had indeed qualified; the issue was that they only qualified for $20,000, and "everyone knows that there's no such thing as a $20,000 house." In "The 20K House" in ***Metropolitan Home*** (March 2009), Karrie Jacobs chronicles how Dorr and Rural Studio went about changing that. Ranging in size from 300–600 square feet, of varying architectural styles, these $20K homes are elegant examples of what design should do.

Ready, set... Is investing large sums in infrastructure a boon or boondoggle? With shovels across the country at the ready, the editors of ***Invention & Technology***



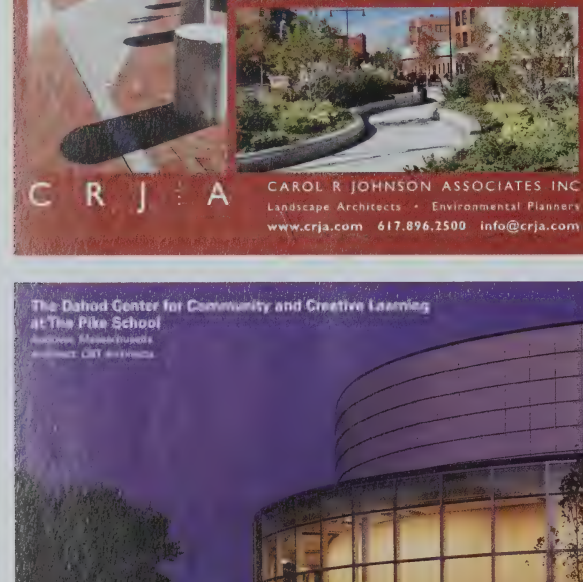
(Winter 2009) explored that question, looking back over two centuries of large, federally funded public works projects. Starting with the 1811 National Road (funded in Thomas Jefferson's administration) and continuing through railroads, dams, tunnels, bridges, interstates, air traffic control, and the Internet, Tom Huntington's cover story presents "America's Top 10 Public Works Projects." The historical approach provides an important context for considering today's investment. That said, much is frustratingly brief, and the Big Dig is treated in a particularly cursory manner as the Bad Boy Poster Child. For the Big Dig — like the Obama stimulus — history is still to be written.

Gretchen Schneider AIA is the principal of Schneider Studio in Boston.

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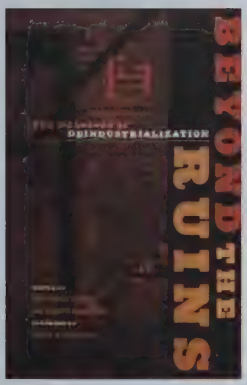
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BEYOND THE RUINS: THE MEANINGS OF DEINDUSTRIALIZATION
Jefferson Cowie and Joseph Heathcott, eds.
Foreword by Barry Bluestone
Cornell University Press, 2003

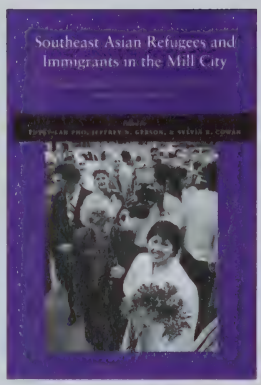
Marx's famous dictum that "all that is solid melts into air" was intended to characterize the experience of capitalism at the apex of industrialization. Yet, as the authors of this collected volume demonstrate, his passage also aptly depicts the process of deindustrialization that began in the second half of the 20th century. As manufacturers moved abroad or to the South in search of lower production costs, thousands of Americans lost their jobs and faced a daunting future. The contributors to this book argue that the ordeal of these workers marked not simply a shift in employment but rather a "fundamental change in the social fabric on a par with industrialization itself."

The nadir of deindustrialization came in the 1970s and 1980s, when a decline in production led many manufacturers in the United States to export or relocate their factories. This trend began to reverse after 1996 as production increased but, by then, the needs of industry had shifted from concrete goods like automobiles to information technology and biotechnology. As the social geographer David Harvey has pointed out, the forward march of productive capacity in the late 20th century was inherently contradictory: increased efficiency led to decreased need for human workers. Unemployment and abandoned industrial structures were byproducts of the success of late 20th-century capitalism.

Beyond the Ruins deepens our understanding of this distressing and complex phenomenon. For instance, Tami Friedman's chapter on the departure of the textile industry from Yonkers, New York argues that the process of deindustrialization began in the early- to mid-1950s, during the postwar economic boom. Bryant Simon reveals the role of racial desegregation in the decline of Atlantic City, as the inclusion of African-Americans challenged the perception of Atlantic City as a place of exclusion and middle-class leisure. Most memorably, John Russo and Sherry Lee Linkon illuminate the loss of identity that accompanies deindustrialization, not just for individuals but also entire communities: "Deindustrialized communities are vulnerable to all kinds of loss — not just the loss of jobs or economic security but also the loss of identity, as outsiders interpret the meanings of deindustrialization to serve their own purposes…In many cases, locals internalize the image of their community as a site of loss, failure, and corruption."

The authors therefore demonstrate that deindustrialization is not only an economic problem but also a social and political phenomenon. By describing the plight of numerous communities across the United States, they point to some of the obstacles to redeveloping deindustrialized areas, especially the stigmatization of former manufacturing towns. As Barry Bluestone and others have elsewhere pointed out, these disadvantages often become "deal breakers" for potential business investors. The challenge is to transform these obstacles into strengths by finding creative ways of making the past an engine to a brighter economic future.

Jeanne Haffner PhD is an urban scholar and a fellow at Harvard University. Her forthcoming book (MIT Press) studies the role of visual technologies in the evolution of the "new urbanism" in postwar France.



SOUTHEAST ASIAN REFUGEES AND IMMIGRANTS IN THE MILL CITY
Tuyet-Lan Pho, Jeffrey N. Gerson and Sylvia R. Cowan, eds.
University of Vermont Press, 2007

The United States has always been a nation of immigrants, but never more so than today: the foreign-born American population has risen from 5 to 13 percent since 1970. But this statistic cloaks an even larger reality. For most developed economies, population growth has stopped. The bad news for national budgets from Italy to Japan is that fewer workers pay into the system supporting more retirees. America has largely postponed its demographic crisis by attracting a young immigrant workforce, accounting for two-thirds, and soon all, of our population growth. Immigrant communities also invigorate cities, one of the greatest forces counteracting sprawl.

The 12 essays in this book portray the Southeast Asian immigrant community's role in revitalizing Lowell, Massachusetts. After the fall of Saigon and the genocide of roughly one quarter of the Cambodian people, government and citizen groups cooperated to resettle 1.3 million refugees in the US by 1980 — 600 in Lowell. But most of Lowell's foreign-born residents came in a vast secondary migration to fill good jobs in computer-assembly plants and to benefit from the critical mass of fellow expatriates. By 1990, Southeast Asian

immigrants numbered 25,000 of Lowell's 115,000 residents, including the world's third largest population of Cambodians after Phnom Penh and Long Beach.

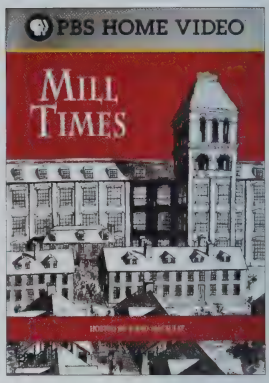
The book highlights the complex social networks thriving in Lowell's new soil. Informal rotating credit associations propel an enviable micro-venture capital system that remade Lowell's boarded-up storefronts into a bustling commercial streetscape. Lowell's "Destination City" campaign comes under fire for squandering opportunities to support the dynamism of local social, cultural, and religious life in favor of corporate giveaways.

Distinct national subcultures experienced differing degrees of violent displacement. Old conflicts transferred intact "from the Mekong to the Merrimack" materialize in new forms in the immigrant landscape of Lowell. The American-trained anti-communist Lao refugees are split from later Lao immigrants over which Lao flag to fly. The "upstairs" and "downstairs" monks of the Trairatanaram Temple are split over how best to reconstitute Cambodian Buddhism after the genocide.

But cultural immersion also reveals solutions. Though constituting only one in five Lowell residents, Southeast Asians account for almost half of high schoolers, a majority of dropouts, and most gang activity. In response, the Trairatanaram Temple launched Operation Middle Path to initiate at-risk youth as Buddhist monks. The lessons of Lowell's immigrant experience point to the potential of social capital mobilized through local informal relationships to resolve problems untouched by government programs.

With the cancellation of travel studios, architecture schools might consider offering a *local* travel studio. The physical infrastructure of new American cultural communities from Lowell to Lewiston, Maine is arguably a more critical landscape for relevant architectural engagement.

Robert Cowherd PhD, Assoc. AIA is associate professor of architecture at Wentworth Institute of Technology in Boston. He is the author of *Cultural Construction of Jakarta* (forthcoming), based on five years of work and research in Java and Bali.



MILL TIMES
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anthropologist, he explains buildings not as simple aesthetic objects, but as the crystallized shells of society's ebb and flow.

Who better to tell the story of the hulking mills of New England and, through them, the story of their era? The author of *Cathedral*, as well as *City* and many other illustrated books, Macaulay narrates the PBS video *Mill Times*, a documentary interspersed with a Disney-inspired animated narrative. Focusing on America's first mill — the Slater Mill in Pawtucket, Rhode Island — it is derived loosely from Macaulay's book *Mill*, albeit more as a companion piece than a video incarnation.

The story unfolds engagingly, the good explained clearly and the bad gently handled for young viewers. It's a story of discovery, adventure, change, and the risks that accompany change; progress and material comfort are celebrated and counter-weighted by reminders of social and environmental consequences.

These labor-saving monsters must have inspired awe, and adult viewers may find themselves reflecting on labor relations, social experimentation, and the surprisingly benign relationship of river and mill — a reminder that prosperity and environmental degradation are not inexorably linked.

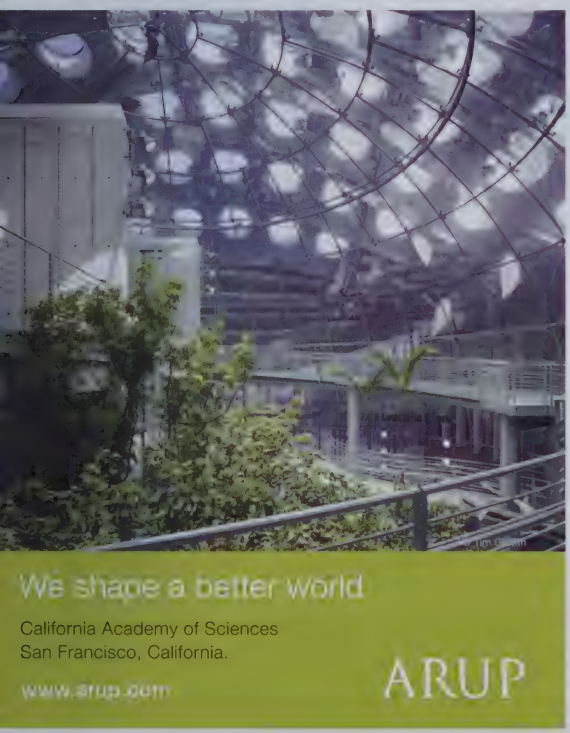
Many New England mills were owned and run by local families, who were held accountable for employees' well-being by conscience and community. Success attracted investment in the form of the now-familiar corporate structure, and accountability thus diffused in a sea of faceless investors and executives. This anonymity seems to have made the deepest inhumanities of industrialization possible: responding to laborers' appeal to conscience, the corporately owned mill's executive sneers, "The investors prefer to remain *discreet*."

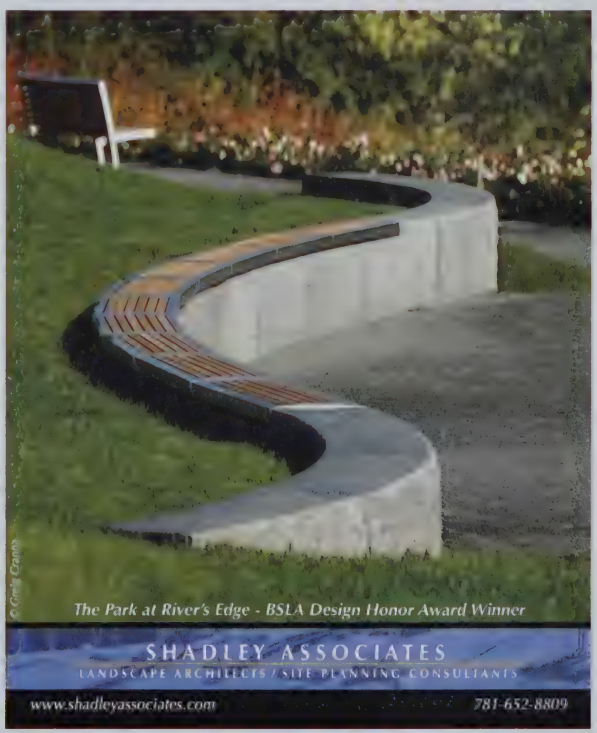
Corporate anonymity wasn't the sole social innovation of mill times — the unique experience of the Lowell Girls is possibly the best known of many boarding arrangements that flirted with social engineering and bring Charles Fourier's utopian "phalanx" communities to mind.

Architects, who wrestle buildings' energy consumption daily, may be surprised at the relative harmony between New England's first mills and the natural environment. These giant mechanical assemblages disrupted rivers, but that's about it: no plumes of smoke, no sooty Dickensian worker housing. Those would come with steam engines and fossil fuels. A river mill was a clean thing. One has to wonder if it couldn't be put to some hydroelectric purpose.

Early complicity in the slave economy is dealt with gingerly; the nightmarish filth and abuse of the late-era mills' response to intensifying competition isn't addressed at all. Given the attention-span constraints of video, however, *Mill Times* presents a comprehensive overview of an era with an impact on our region that is deep and still unfolding.

Conor MacDonald is a writer in Boston and a member of the Common Boston Steering Committee.





Site Work | WEBSITES OF NOTE

GATEWAY CITIES
http://gateways.massinc.org
The go-to site for background on the Gateway Cities initiative, including profiles of the 11 Gateway communities. While you're there, rummage around the rest of the MassINC site and check out the "Commonwealth Unbound" blog for commentary on the state's political and civic landscape.

GATEWAY CITIES COUNCIL OF GOVERNMENTS
www.gatewaycog.org
The *other* Gateway Cities are 27 cities in Southeast Los Angeles County and Los Angeles County. These California communities have also joined forces to stimulate economic development, although mill buildings don't seem to be on the agenda.

LOWELL CITY MANAGER'S BLOG
http://lowellma.wordpress.com
If you're going to be a vibrant 21st-century city, it helps to communicate like one. Lowell City Manager Bernie Lynch talks to his constituents, providing real information and, even better, explanations for what's going on — worthwhile reading for anyone interested in city government.

HARLEM CHILDREN'S ZONE
www.hcz.org
If you've heard of President Obama's "Promise Zone" proposal for urban neighborhoods, you've heard of HCZ — a successful, innovative, neighborhood-based program founded on the belief that educational success depends upon strong families and strong communities. Click on "programs" to see the scale of HCZ efforts, starting with Baby College (for parents).

AMERICAN LIFE HISTORIES: MANUSCRIPTS FROM THE FEDERAL WRITERS PROJECT
http://memory.loc.gov/wpaintro
In the 1930s, WPA writers documented the lives of Americans across the country; those manuscripts are now available online. Massachusetts texts include accounts of life in the mills, labor strikes, and immigrant experiences.

LIZZIE ANDREW BORDEN VIRTUAL MUSEUM
www.lizzieandrewborden.com
Lowell has Kerouac, New Bedford and Pittsfield have Melville, but Fall River has Lizzie. Maintained by PearTree Press, this site is a mostly serious (there *is* the "Mondo Lizzie" blog) presentation of the life and Victorian times of the city's most famous orphan.

We're always looking for intriguing websites — however re-invented the connection to architecture. Send your candidates to: epadjen@architects.org.

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Fitchburg

Here are some of the things I know about Fitchburg: where to find the prime parking spots; the names of the flat roads in this hilly city; the fact that the new fire station has excellent bathrooms with showers.

Perhaps you weren't aware that when it comes to bicycle races, Fitchburg is a world-class city. Every July for the last 50 years, the city has hosted a race attracting hundreds of amateurs and professionals, including Lance Armstrong and Greg Lemond. Racing the Fitchburg Longsjo Classic nine times, I have come to know the city in ways distinct from the ways in which I know other places.

Named for native son Art Longsjo, an Olympic cyclist and speed skater, the race has evolved from a simple looped course through downtown Fitchburg into a four-day "stage race," with each day's event in a different venue.

Day One brings a time trial, in which racers ride individually against the clock. The route climbs 6.2 miles from above the Fitchburg Civic Center on a cracked rural road up to a lake. Technologically savvy racers build computer models of the course in order to replicate its physiological demands and to evaluate which equipment combination will maximize their speed with the right mix of aerodynamics, bicycle weight, and riding position.

Day Two is epic — usually broiling hot and humid, always long, hilly, and decisive. The 11-mile loop, repeated six to nine times for the pro races, starts at the Wachusett ski area just outside the city and tours the wooded roads of Princeton, up a long, sun-exposed hill. The 50-plus mile-per-hour descent used to be notorious for cracks and frost-heaves, which nearly caused the death of an Australian pro a few years ago; we all sighed in relief when it was repaved. The race finishes with a two-mile climb up Mount Wachusett, often amid startled hikers and dog-walkers unprepared for the buzz.

On Day Three, we race through a working-class neighborhood near Fitchburg State College, on a three-mile circuit featuring a steep climb out of a sharp corner. Residents, long accustomed to the annoyance of road closures, gather in lawn chairs along the course; kids wander around eating popsicles as the announcers call the race. It's usually sweltering and racers take hand-ups of water bottles for drinking and dousing from support crews sitting on the sidewalks and on coolers.

By the final day, the overall race is usually determined, and the "criterium" — a short course through the downtown — brings a carnival atmosphere, especially when it coincides with the Fourth of July. Food and equipment vendors line the streets, grandstands are set up at the finish line, and crowds mingle and set up chairs: friends and families of racers, locals and volunteers, and Boston cyclists who have ridden over to watch and cheer.

This is where competitors acquire a new level of intimacy with the city. We know that the uphill drag is usually into headwind. We know where to glance at the bank clock with the thermometer that justifies why we feel so hot (104 degrees one year). We anticipate the sweeping u-turn at the roundabout planted with a garden, the gradual descent below the parking garage near the river, and the pair of 90-degree left-hand corners. The speed, technical corners, and proximity to everyone else telescope awareness to the immediate conditions of wind, thirst, potholes and grates, crosswalk paint and manhole covers that are slippery in rain, changes in momentum that signal an attack, bells indicating a sprint for cash, and the clatter of pedals on pavement that indicates an impending crash. Faces and noise outside of this are peripheral, a montage out of which you occasionally hear your name.

Here is what else I know about Fitchburg:

v Photo courtesy www.Longsjo.com.



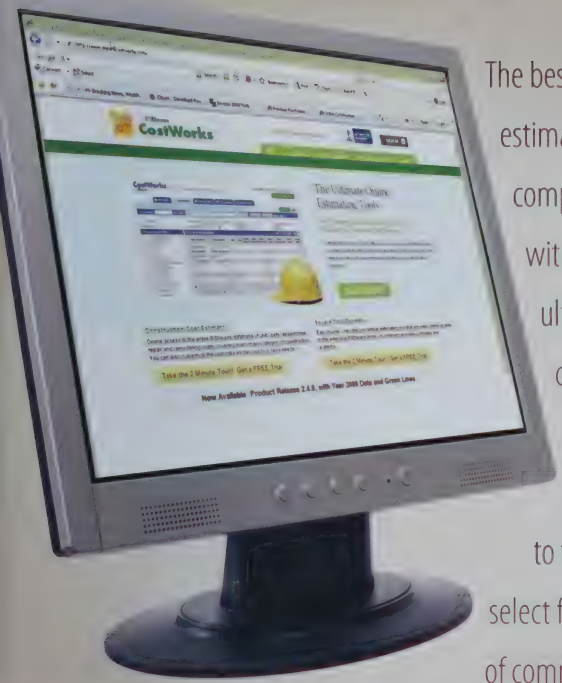
Hundreds of volunteers put on the race, registering athletes, marshalling courses, and hosting spaghetti dinners. The local bike shop offers free repairs to racers. Families pack their houses with pro cycling teams for the week, surrendering their garages to dozens of bicycles, throwing huge picnics, and exchanging stories of life in Fitchburg for accounts of Auckland, Boulder, and Santa Rosa. Local kids wear the jerseys of the hosted teams, scavenge discarded team water bottles as souvenirs, and listen intently when teams visit the schools to talk about racing, health, and helmet safety.

And this: I know how deeply so many of Fitchburg's residents care about this mill city and how eager they are to have a maligned city understood and restored. ■

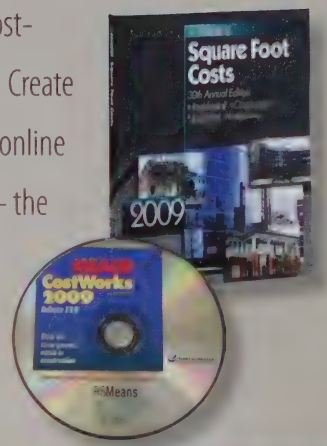
Anna Milkowski is a graduate student in environmental policy and public health at Yale University and the author of *Mountain Biking the Berkshires* (Falcon, 2001).

Note: The 50th Annual Fitchburg Longsjo Classic will be held July 2–5, 2009.

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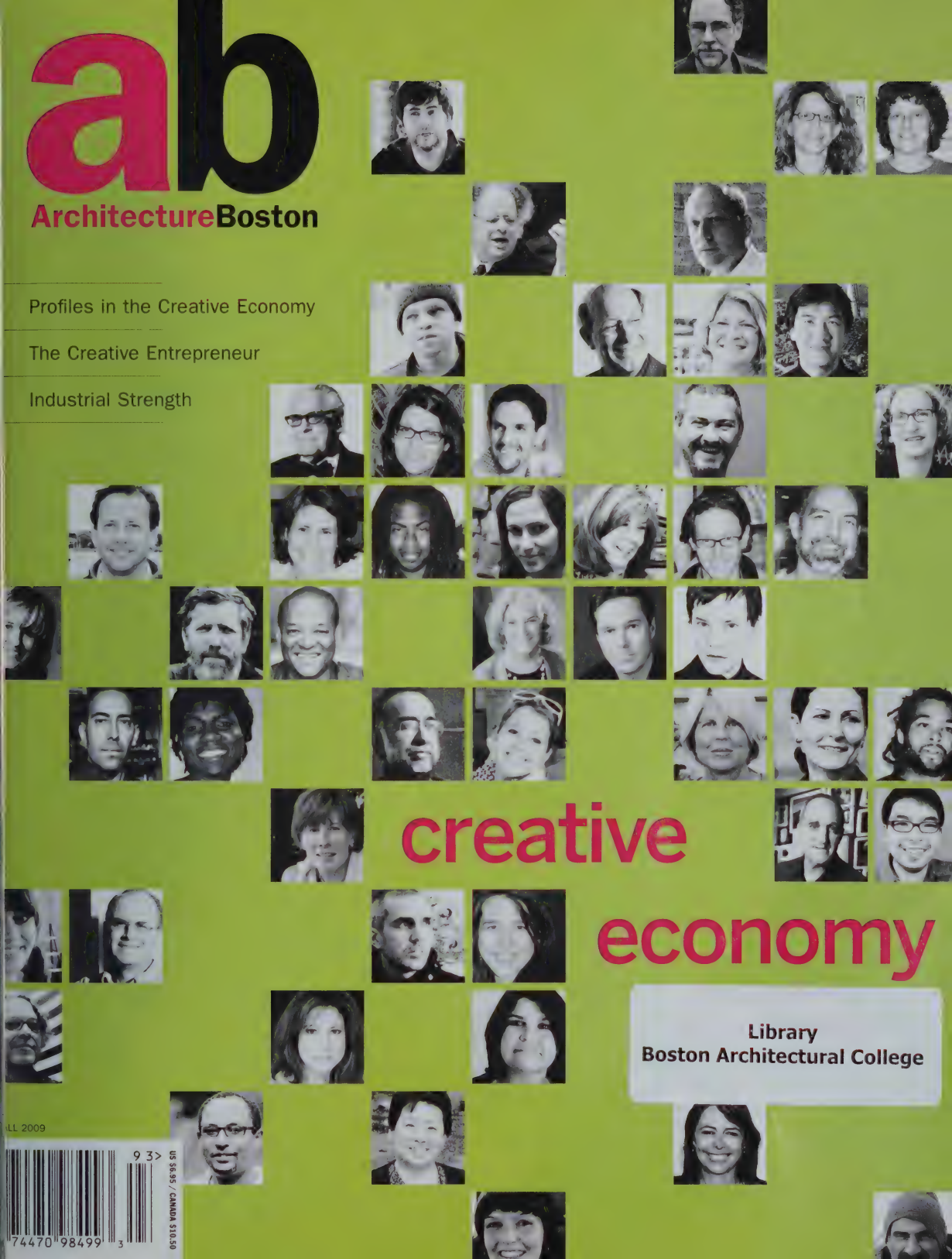
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creative economy



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Meet the Creatives

"Art is the handmaid of human good."

Maybe the "handmaid" thing is a clue, but chances are, few people would associate the sentiment above with the early 19th century, let alone the birth of the Industrial Age in America. Even fewer would imagine that the phrase was chosen by a mayor as a city motto. But for more than a century and a half, "Art is the handmaid of human good" has appeared on the official seal of the city of Lowell, Massachusetts.

The origin of the phrase is unknown; given its application in a city that was dependent upon the skill of its millworkers (especially young women — handmaids indeed), the motto is often interpreted as a tribute to manual skills or a celebration of craft. Its real meaning is of course much broader.

We had only to listen to the recent Congressional debates about stimulus funds to understand how far art has since fallen in the political firmament. Too many politicians and policy-makers view support of the arts as a nonessential indulgence: art-for-art's-sake is frivolous when Art has lost his job and can't feed little Artie, Jr.

And so it may be a surprise that among the greatest champions of the arts are some economists and politicians — people who have not lost sight of the critical relationship between art and industry that was commonly acknowledged by our 19th-century forebears. They understand that support of the arts is not indulgence; it is vital to fostering creative thinking and the innovation that fuels our economic system. They know that if there were no art education, there would be no Apple. In this crowd, "creative" has moved from adjective to noun, and the creatives are those people who generate real and meaningful economic activity — jobs, revenue, products, services — through organizations and enterprises that are based in the arts: cultural institutions, of course, but also advertising firms, publishing houses, videogame developers, design firms, and countless others.

The focus on the Creative Economy is relatively recent — so new, in fact, that researchers are still analyzing data that will help us understand its mechanisms fully. Economist Richard Florida introduced the concept to the public with his 2002 book *The Rise of the Creative Class*, which famously suggested that cities with active arts communities, significant gay populations, ethnic diversity, and tolerance of bohemian lifestyles are more apt to have a competitive edge. The subsequent rush to promote local manifestations of the Creative Economy threatened to join pedestrian malls, festival marketplaces, and convention centers in the long, failed lineup of desperate measures by beleaguered economic development and planning directors.

But if we set aside the temptation to promote the Creative Economy by artificially isolating it through zoning and well-intended regulations into cultural districts that are the equivalent of petting zoos, we will find that the creatives are already all around us — invisible only because no one previously bothered to identify them, let alone count them. Some have built large businesses with impressive staffs and revenues; some are employed by larger entities that are part of other economic sectors. And still others — many others — work successfully in small businesses and proprietorships that offer a model for new entrepreneurial behaviors: nimble, fluid, collaborative.

Support of the arts is not indulgence; it is vital to fostering creative thinking and the innovation that fuels our economic system.

With our large, young, talented workforce, an impressive array of schools and institutions that prepare and sustain creative workers, and an established base of technological innovators who understand the value that right-brain thinking can add to left-brain processes, this region is perhaps better prepared than any other in the country to develop a Creative Economy of global standing. This isn't art for art's sake. It's art for our sake. ■

Elizabeth S. Padjen FAIA
Editor

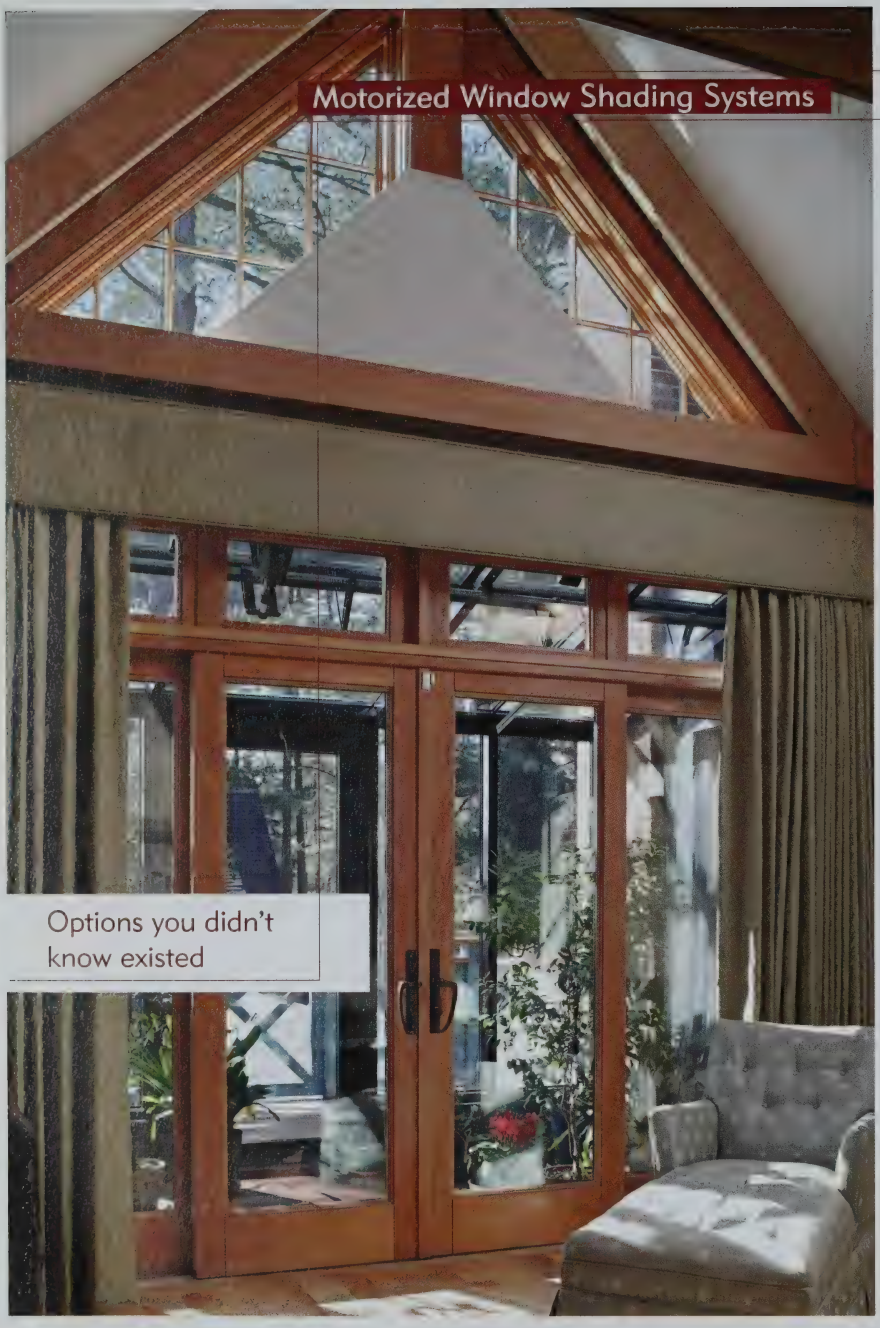
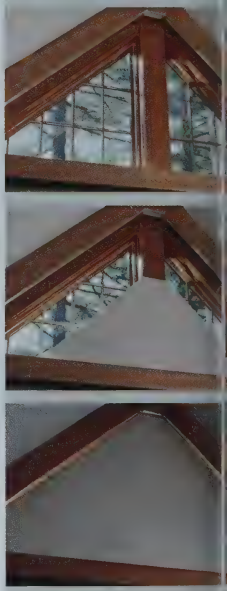


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Thank you for your "Gateway Cities" issue [Summer 2009]. I would like to underscore the importance of strengthening civic life in these cities. This is more than a platitude — it's the most fundamental element of their long-term recovery. When residents are not connected to each other or to public life, it is easier for low expectations to develop, and for institutions, services, and quality of life to erode.

While these bad habits usually develop over decades, it is possible to begin turning it around quickly. The first step is to create forums where residents, businesspeople, municipal officials, and nonprofits can come together to share information, build trust, establish personal relationships, and have constructive public discussion. Turning these conversations into a shared long-term vision for the city that everyone can relate to and get excited about is the next step. This has been shown to be another element of successful revitalization stories in places like Chattanooga, Youngstown, and Kalamazoo.

Furthermore, place-making and economic development initiatives that support the vision should be designed to build the assets and improve the quality of life of the people who already live in these cities. The middle-class families that policy-makers so desperately covet will not in the short-term be attracted from the outside — they will be grown from the working-class families who already live there.

André Leroux
Massachusetts Smart Growth Alliance
Lawrence, Massachusetts
Co-author, *Voices from Forgotten Cities*

Matthew Frederick's article "Radical Urbanism" [Summer 2009] was truly a breath of fresh air. The problems with the planning process he mentions are even evident at the small-town level, where I live and work, where big-city planning restrictions and requirements are put in place with little or no thought to the effect on the small town's economy and what made that small-town lifestyle so appealing. It's interesting that the current approaches to planning are attempting to duplicate that same small-town feeling in minutely planned new communities that often cost huge dollars to move into and live in. Meanwhile, small towns are still using older planning schemes that sap the vitality out of their downtowns, leaving vacant buildings that are limited by planning laws to one possible use, killing any hope for the revitalization of that same downtown core.

This whole problem is another example of the "central planning" type of thinking that is evident throughout our society, at every level of government. There is a real fear in some circles of allowing people the freedom to pursue their own self-interest, thereby benefiting the culture as a whole.

We can only hope that Mr. Frederick's thinking becomes more widespread, but it may be too late for many small towns and communities in this country. We have become a culture of dependents, trusting not in ourselves and our own efforts and initiative, but in government's benevolence for our well-being. And government is always ready to take that responsibility and in the process, take more and more of our freedom and potential for personal fulfillment.

Keith P. Hemingway, RA
Bristol, New Hampshire

The scope and nature of your coverage of our struggling Gateway Cities [Summer 2009] makes one appreciate how vital it is that our professional community has such an enlightened and engaged journal that is not afraid to take on such broad and seemingly intractable issues. The prosperity of the region and of Boston is at stake and *ArchitectureBoston* is to be congratulated for helping to illuminate the challenges as well as the vast potential that these cities hold. There are difficult decisions to be made during such challenging economic times; yet there is still much to be optimistic about. I hope that this issue will inspire us all to renew our commitment to supporting policies and initiatives like historic tax credits and the South Coast Rail project that reach beyond metropolitan boundaries and are crucial lifelines for many of these communities.

Edgar Adams
School of Architecture, Art & Historic Preservation
Roger Williams University
Bristol, Rhode Island

The current economic crisis and stimulus efforts are a rare opportunity for us to take stock of our profession and chart new directions (or strengthen existing ones) for practice, policy, and pedagogy that truly make a difference. In many ways, the Summer 2009 issue of *ArchitectureBoston* foretells a path that architects and urban designers must follow in order to become even more impactful in the shaping of our cities and the critical challenges that we face.

Let me suggest a few guideposts for action. First, drawing inspiration from these excellent articles, asking difficult and pointed questions, is just as crucial as finding design solutions. Second, the issue suggests a re-examination of our values as architects and urban designers, including a turn toward humanist values, such as those outlined by Boston's own Kevin Lynch in his masterpiece, *Good City Form*. Third is to develop a broader and more sophisticated sense of what design truly involves, including the design of long-term processes and consequential policies, as the articles suggest. Fourth, we can train future generations of architects and urban designers to be extremely open-minded and innovative (beyond just form and materials) through experimental and open-ended studios, critical examination of relationships between urban design and public policy, and learning through a deep understanding of international

comparative urbanism, especially from some of the most resourceful and innovative cities in Asia, Africa, and Latin America. Finally, a self-critical and questioning attitude (rather than the posturing some star architects are prone to do) results in being open to change, to constant learning, and to continued innovation.

Aseem Inam PhD
School of Architecture and Planning
Massachusetts Institute of Technology

For those of us who live outside Route 128, it's been a long time since we believed that anyone outside of these cities cared enough to recognize the importance of these vital, regional hubs to our state's future. The spotlight shed on their potential by a periodical with "Boston" in the title is significant and welcome.

As the former mayor of one of these cities, Fall River, I know that public attention and education is a crucial first step in building support for the necessary re-investment these cities need to thrive. These 11 outlying communities, with great histories that, at one time, saw them lead the world in a variety of industries, brought a richness to Massachusetts of culture and wealth. Although suburbanization and de-industrialization have brought new challenges for them to face, these cities have come together to make the case that they are not a special-interest group but, rather, a gateway to a new economic future in our state, providing livable neighborhoods where families can live and work and where the innovative spirit that once symbolized their collective enterprise can be present once again.

Greater Boston and everyone in the Commonwealth needs to care about what happens in these cities, in order to ensure balance in our state-wide economy and to support sustainability and prevent further sprawl. And the residents in the communities around these cities need to understand that their regional economies are dependent on the health of these cities.

Edward M. Lambert, Jr.
The Urban Initiative
University of Massachusetts Dartmouth

Typically, large-scale visions for cities' renewal focus wholly on the needs of adults — as if no toddlers, children, or youth walked the streets, or as if those young people would not inherit the streets and buildings being planned. So the "Greetings from MY City" project [Summer 2009] is a welcome change — as were the bold images of their city that the young photographers produced.

In developing a series of community cultural plans, we have asked young people to map the spaces in which they learn and create. The resulting maps and interviews reveal young people as sharp analysts of their neighborhoods and cities. They point out that few cities bother to build an infrastructure that supports the creativity of the next generation. They are equally clear about what would make a difference: safe, unstructured 24/7 spaces where they can do their work; housing with artist studios so they can learn from experts and mentors; public transportation that connects them to out-of-school learning opportunities; jobs where they can learn and earn; and an information architecture that would connect them to programs, scholarships, and work opportunities.

There is much talk of creating cities that rise, like phoenixes, from the ashes, because they foster local innovation, artistry, and entrepreneurship. But in the end, this cannot only be about building arts districts or loft apartments or urban farms that attract new adult populations: it must also be about developing neighborhoods and activities that sustain the next generation of citizens who want and know how to invest in, inhabit, and enliven their communities.

Dennie Wolf
WolfBrown
Cambridge, Massachusetts

We want to hear from you. Letters may be e-mailed to epadjen@architects.org or sent to *ArchitectureBoston*, 52 Broad Street, Boston, MA 02109. Letters may be edited for clarity and length, and must include your name, address, and daytime telephone number. Length should not exceed 300 words.

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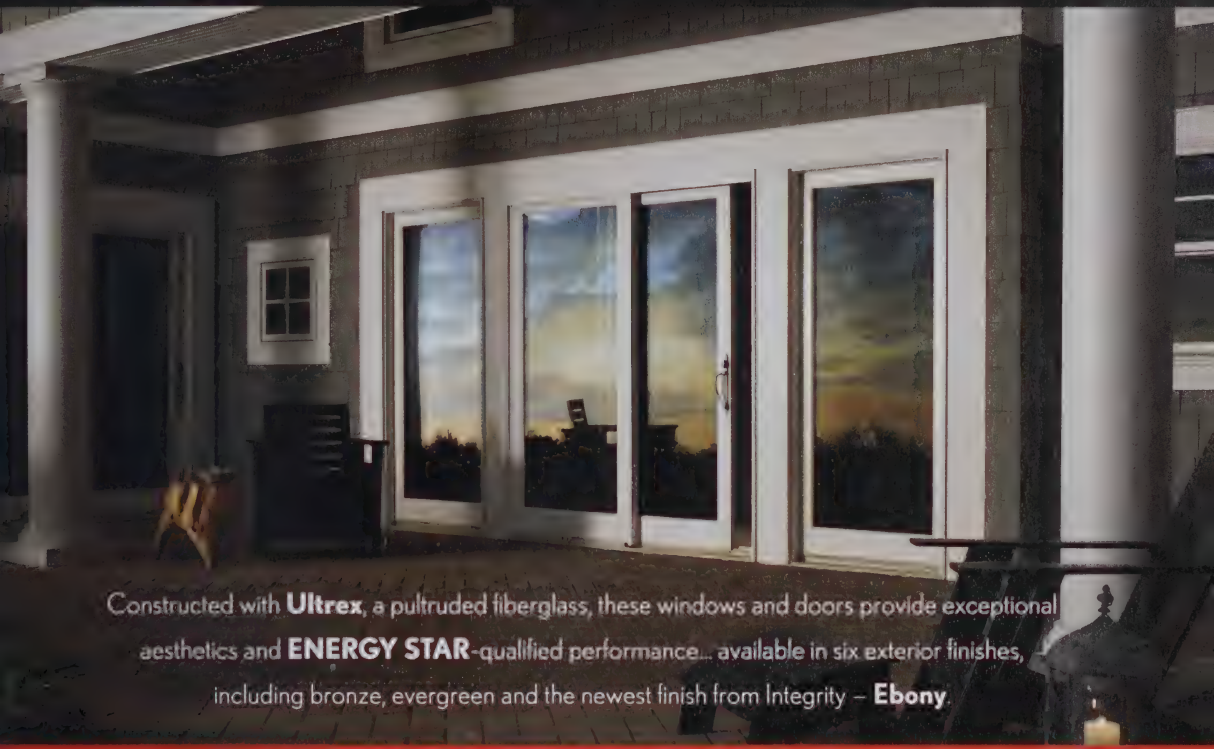
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Solomon R. Guggenheim Museum, New York; 1943–59. Ink and pencil on tracing paper.
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Frank Lloyd Wright: From Within Outward

Guggenheim Museum
New York, New York
May 15–August 23, 2009

In celebration of the 50th anniversary of Frank Lloyd Wright's iconic building, the Guggenheim is hosting its first exhibition of his work. Featuring 64 projects — both built and unrealized — this exhibition offers an intimate view into his design process through 200-plus original drawings as well as newly commissioned models and digital animations.

According to Phil Allsopp, president/CEO of the Frank Lloyd Wright Foundation, Wright completed over 1,100 designs; the archive is vast enough to supply an exhibition of this size annually for 110 years. The curators chose what they believe are Wright's best drawings, and the usual suspects are in attendance (Unity Temple, the Taliesens, and of course the Guggenheim itself), but his unbuilt projects, many on display for the first time, are perhaps some of the most fascinating.

Of his design for the San Marcos-in-the-Desert Resort, a victim of the 1929 crash, Wright said, "I have found that when a scheme develops beyond a normal pitch of excellence, the hand of fate strikes it down." This held true for the captivating Gordon Strong Automobile Objective and Planetarium, the hand of fate being an unhappy client who declined to build it. Its form was an upside-down predecessor to the Guggenheim — modeled in section for the exhibition, complete with twinkling stars. Also stunning are Wright's drawings and a new topographic model of the Huntington Hartford Sports Club/Play Resort that daringly cantilevers from the museum's wall.

While visitors of the Guggenheim often take the elevator and then meander down its spiraling ramp, this exhibition is arranged in a loosely chronological order from the rotunda floor upward. It is only fitting to culminate at the top, mirroring the path of Wright's career and legacy.

Murrye Bernard is a freelance writer in New York City and a contributing editor to *eOculus*, a publication of the AIA New York Chapter.

Sprawling from Grace, Driven to Madness

Directed by David M. Edwards
Produced by EMotion Pictures, 2008
DVD, 82 minutes

A somber mood prevails throughout *Sprawling from Grace, Driven to Madness*, a primer on the urgent need to reform our culture's automobile-dependent ways. A who's who of national visionaries in energy, transit, and sustainable development tell the story, with appearances by some familiar Bostonians (David Dixon, Michael Dukakis, Tad Read).

Attempts to lighten the mood with nostalgic, black-and-white clips of the American love affair with the automobile and suburban life instead leave one wistful for simpler times. Though it tries, the film fails to deliver the emotional weight of a call to action.

More unfortunately, it neglects the ready availability of solutions. Bad news is emphasized over the good despite the positive data now emerging from cities (such as Portland, Oregon) in the forefront of the sprawl battle; images of today's success stories — walkable shopping streets, mid-rise districts with transit stops — are fewer and less compelling than they could be. The *Scared Straight* model is indeed scary, but fear is not a reliable motivator.

Gretchen Von Grossmann AIA, AICP is the principal of Von Grossmann & Company in Boston.



Ecological Urbanism: Alternative and Sustainable Cities of the Future

Harvard Graduate School of Design
April 3–5, 2009

One subtext of this conference became clear almost immediately when keynote speaker Rem Koolhaas cursed architects for having no answers. The message was repeated over three days: Attempts to solve design problems by focusing only on architecture are inadequate and ineffective responses to real urban problems in this urban century. Design practice as it has been is over. Design practice must change in order to address pressing issues of climate change, social and economic equity, and health. The way forward was not at all clear, although the range of presenters — architects, historians, humanists, theologians, bureaucrats, academics, agronomists, artists, scientists, inventors, landscape architects, planners, politicians, a university president, a dean, and a mayor — symbolized the core idea that multiple disciplines working together are essential.

Its meaning elusive, the term "ecological urbanism" held an umbrella over everything "sustainable" while emphasizing the urban. The varieties of urbanism referenced over three days ranged from "ethical" and "landscape" to "reconsidered," "dynamic," and "user-generated." The conference was extremely well planned — including an exhibition, forthcoming book, and website with podcasts (http://ecologicalurbanism.gsd.harvard.edu) — yet it conveyed a messy sense of confusion and incoherence, very much a work in progress. The need to craft a new language seemed to be another subtext. Perhaps the unadorned term "urbanism" is an adequate place to start and a useful focus as thinkers come to understand the complexity of the city's dynamics while being constrained by realizations about natural-resource limits and damage to the environment.

It is good news that the powers that be, including now Harvard as well as the City of Boston, recognize both the need and the opportunity to make important changes to the status quo and to embrace new knowledge, with the understanding that cities and regions must be part of the solution. Alex Felson of Yale University asked the best question: "Is there a way architects can and will take in data and processes of ecology and make a difference?" As the conference made clear, the answer will require architects to adopt a broader stance as engaged creative thinkers and activists finding new ways to bring the knowledge to bear across disciplines, collaborating with peers in every field. It won't be easy, as Andrea Branzi cautioned: "Interdisciplinarity is not a comfortable affair."

Rebecca G. Barnes FAIA has practiced architecture, urban design, and planning in Boston, Providence, and Seattle and was the chief planner of the City of Boston.



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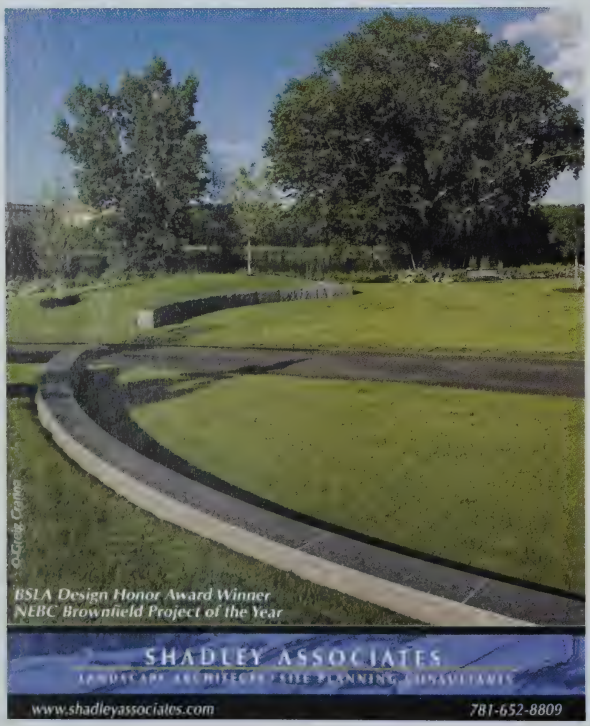
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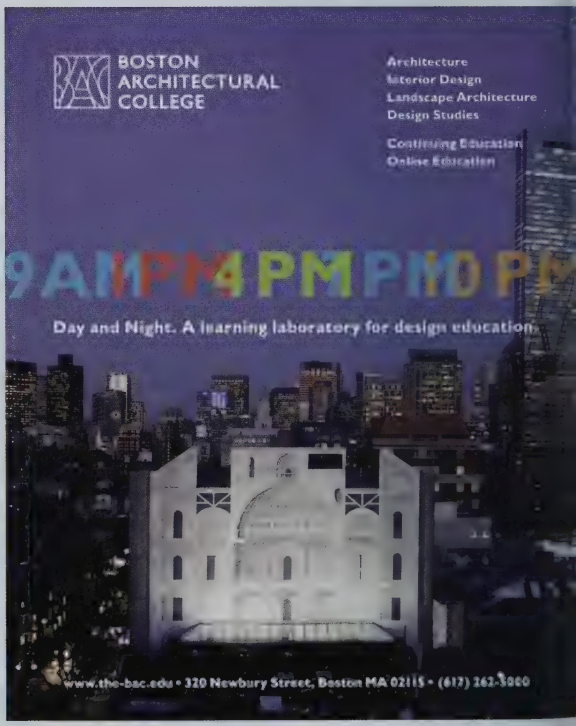
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Public Displays of Affection



∧ Photo by Joan Wickersham.

The place: New York City's Museum of Sex, located in a small nondescript mid-century commercial building in the middle of what used to be called the Tenderloin District.

The shtick: Put it out there. Display it frankly, the way other museums display paintings, or dinosaur bones, or decorative arts objects, or artifacts of war.

1:25 Just inside the front door, a sign says: "LINE FORMS HERE," but, on a Tuesday afternoon, there is no line. A sign behind the ticket counter: "PLEASE DO NOT TOUCH, LICK, STROKE, OR MOUNT THE EXHIBITS." People wishing to display this directive in their kitchens are in luck, as the sign has been reproduced on refrigerator magnets for sale in the gift shop.

1:29 The gift shop is cheerfully smutty. Corkscrews shaped like naked women; coasters printed with photos of naked men; an orange juicer resembling a pair of breasts ("Squeeze two halves at the same time"); books about bras and Japanese bondage; *The Illustrated Book of Orgies*; fur-covered handcuffs; anatomically explicit pasta, origami, balloons, and blown-glass swizzle sticks; and various small vibrating objects including a yellow rubber bathtub duck.

A couple is giggling quietly at the back of the shop. "We should get this for Arnie and Sarah," she says, but his reply is inaudible and they leave without buying anything.

1:34 Gallery 1, a bright, open space with windows looking onto Fifth Avenue, is displaying a show called "The Sex Lives of Animals." Visitors are welcomed by a large white plasticine sculpture of an excited ape. The aesthetics of the show are upbeat and scientific: graph-paper-patterned walls featuring headlines like "Parthenogenesis: Living Without Sex" and "Sexual Cannibalism." A man and woman in their 60s — tall, both with short silver hair, wearing fanny packs — peer at an exhibit comparing the genitalia of various species. "I'm not certain here which is the male and which the female," she says, of a large photo showing two barnacles.

"Dissection would tell more of the story," he says.

1:38 Another man — nearby but not too nearby; in this museum, few people gather in groups — whispers to the woman he's with: "You saw the collection of penis bones?"

"Yes, but I didn't think they had bones."

"Well, I guess maybe in some species they need them," he answers earnestly.

1:44 Two women in their 20s pause beside a plasticine statue of an orgy involving three white-tailed deer. "Is this for real?" one woman whispers to the other.

1:52 At the back of the gallery, a number of people stand around watching a video about bonobos, Congo apes who, according to the chirpy audio narration, have "a rich and varied sexual repertoire." The film continues for several minutes — lots of frantic, happy-looking primate action — while the people stand around and watch in solemn silence. The narrator explains that there is often same-sex activity between male bonobos, and even more between females. "The bonobo, our closest relative, lives in a society in which the goals of the human feminist movement have been achieved!"

2:05 Upstairs, Gallery 2 displays an exhibit called "Sex and the Moving Image" — museum-speak for movie sex. In contrast to the white laboratory vernacular of the downstairs gallery, this long narrow room is designed as pure peep show. It's dark. To the side are a number of little open booths with screens on the walls. The main space is divided into two corridors by a long half-wall suspended from the ceiling and ending several feet above the floor, so that the people standing on either side are hidden from each other except for their feet and a little bit of leg. This suspended partition is studded with screens, each of which runs movie scenes in a constant repeating loop. Loud music pulses through the space, providing an audio cover under which conversation can take place — except that there isn't a lot of conversation. People stand before the screens, silent, watching the butter scene from *Last Tango*, the rape scene from *Deliverance*. Each screen is capped by a blue-lit sign assigning some academic-sounding category: "Mainstream: Same Sex," "Youth and Virginity," "Sexploitation," "Nudist Films."

2:09 An anguished cry from one of the booths: Greta Garbo as Anna Christie confessing harshly, "Yes, it's *that* kind of house. I hate men!"

2:14 Beneath a sign that says "First Experiments," Hedy Lamarr swims in *Ecstasy*, Greta Garbo smolders in *Mata Hari*, Mae West vamps in *I'm No Angel*.

2:22 "Metaphorical Sex," says a prissier sign nearby, above a screen running Hollywood clips from the late '30s through the '50s, when nothing could be shown but a lot was implied: *Cat on a Hot Tin Roof, Gone With the Wind, Notorious, A Streetcar Named Desire*.

2:31 And just beyond that, from the same era but apparently belonging to a different world, a stag film gallops cheerfully along: woman shows up at man's door, peels down, does stuff, then prances naked to the phone, dials a girlfriend, and presto! the friend rings the doorbell, eager to join the party.

"Yes, it's that kind of house," Greta Garbo moans again through the darkness, her film loop having run full circle. "I hate men!"

2:35 Off to the side, along the wall of smaller peep show booths, is one large booth fitted out with several benches. The graphic on the screen says "Volume I: Advanced Sexual Techniques and Positions," produced by the Sinclair Intimacy Institute. "Play video" is invitingly lit on the menu, but no one does.

It's incredibly explicit and mesmerizingly boring.

2:37 Only one screen attracts a big group. "Celebrity Sex," where the loop includes the infamous Paris Hilton video. A crowd of people stands around watching the tape. It's incredibly explicit and mesmerizingly boring. She seems as intent upon displaying her manicure as her prowess, and the only visible part of her boyfriend is a little short on personality. But the audience stays with them, gaping, through the whole dull marathon. Then the tape switches over to a re-enactment of the John Wayne Bobbitt incident — and the crowd instantly scatters and vanishes like a school of fish dispersing at the arrival of a Great White Shark.

2:42 An unusual occurrence in the museum: an animated conversation between a man and a woman. They are standing in one of the little peep show booths, watching films of the faces of people having orgasms. These visitors are speaking loudly and unselfconsciously! They're not afraid of being overheard!

And, when overheard at closer range, they turn out to be speaking in Swedish.

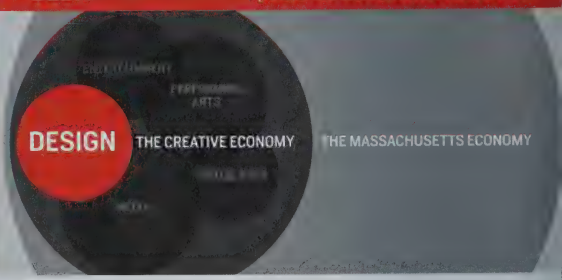
2:46 Suddenly an audio track comes piping through the gallery. Some intrepid couple has pressed the "play video" button to start the instructional technique film. A recorded man's voice confesses, with the kind of earnest faux-candor common in infomercials: "It seems that every time we make love, I'm still fumbling around in the dark."

And, not to be outdone, a woman's



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voice announces "I know I could enjoy sex more if I just felt better about my body."

Several booths away, Greta Garbo moans out her disillusionment yet again.

2:50 Walking down the hall to Gallery 3, the soundtrack from the instructional video is still, plaintively, audible: "We're here to take away the mystery and expose the beauty and depth of our organs."

2:51 Gallery 3 isn't a lab or a peep show; it looks like a museum. Glass display cases, labeled exhibits, overhead track lighting. The exhibit is called "Spotlight on the Permanent Collection." Essentially, it's an attic — a jumble of racy odds and ends. Scary-looking old gynecological instruments. Quaint sex-education pamphlets, for both schoolchildren and adults. Erotic Japanese and Indian prints, old French postcards, nude male bodybuilding shots, cells from animé movies, Picasso lithographs, burlesque and pinup photos. A baldacchino-like structure in the middle of the room: a bondage frame. Most people give it a wide berth, but the Swedish couple walks right in, talking and gesturing, gazing curiously up at the various joints and pulleys.

2:53 As with the bonobo soundtrack in Gallery 1 and the music in Gallery 2, this gallery is also filled with sound to create an audio privacy zone so people can speak softly to each other without being overheard. Here it's the soundtrack of a documentary film about an artist who makes pornographic dioramas and movies using robots made from Barbies and GI Joes. "Most Barbies are resculpted. You sand 'em down, add a cranium," he explains. "This is Madam Robot's artificial insemination machine."

2:55 A display of life-size dolls, including one called "Virtual Girl: The Ultimate in Sexual Reality." Displayed along with her are various interchangeable accommodating attachments. "Ewwww," says a female viewer, one of the few really audible exclamations of the entire afternoon.

2:56 In a nearby case, a model of a female torso made out of foam, shielded by a sheet of Lucite with holes cut out over the figure's breasts. "PLEASE TOUCH GENTLY," the sign says; but the breasts are cracked, gouged, nearly ripped off.

3:00 Gallery 3 is not a room people linger in. Mixed in with the jauntily kinky and the quaintly coy is an undertone of misogyny. Or maybe there's just so much of this stuff you can look at in an afternoon. Or maybe people are tired of being so unnaturally quiet and polite.

3:02 A man and a woman hurry down the stairs, back to the lobby. At the bottom of the staircase is a security guard. "Did you see everything?" he asks seriously, as if a negative answer would require that he send the couple back upstairs to inspect whatever they might have missed.

"Yes," the woman says firmly. "We saw it all." ■

Joan Wickersham's memoir, *The Suicide Index* (Harcourt), was a 2008 National Book Award finalist.



INDUSTRIAL STRENGTH

When creativity is your stock in trade, there is strength in numbers.



PARTICIPANTS

Karl Baehr PhD is the director of the business and entrepreneurial studies programs at Emerson College. He was named one of the top professors of entrepreneurship in the country by *Fortune* magazine in 2007.

Beate Becker is the director of the Design Industry Group of Massachusetts (DIGMA).

Nancy Fitzpatrick is the chair of the Berkshire Creative Economy Council. The owner of the Red Lion Inn and Porches Inn (in Stockbridge and North Adams, Massachusetts), she is also vice chairman of The Fitzpatrick Companies, parent company of Country Curtains and Housatonic Curtain Company; a partner in Evviva (a women's apparel boutique); and owner of Fuchsia Inc., a designer and manufacturer of home furnishings made from recycled clothing.

Matthew Morrissey is the executive director of the New Bedford Economic Development Council.

Elizabeth Padjen FAIA is the editor of *ArchitectureBoston*.

Jason Schupbach is the creative-economy industry director for the Massachusetts Office of Business Development.

Beth Siegel is the president of Mt. Auburn Associates, an economic-development consulting firm in Cambridge, Massachusetts.

Anita Walker is the executive director of the Massachusetts Cultural Council.

Carole Walton is the manager of Create Boston, an economic-development initiative of the Boston Redevelopment Authority.

Elizabeth Padjen: I've come to think of the Creative Economy as the purloined economy — something that's been hidden in plain view. It's been with us for a long time but hasn't really been considered a cohesive economic sector until recently. As a result, there seems to be a lot of confusion about definitions — everyone seems to have a different opinion. There's the cultural-tourism piece, which has to some degree hijacked much of the public understanding of the Creative Economy in this state. There's the "applied art" definition — putting creativity and the arts to some functional purpose. That would include architects, landscape architects, graphic designers, product designers. But it also includes advertising, film, videogames, and media — the reach of this sector into all aspects of our lives is remarkable. And of course there is an enormous population of what might be called "embedded creatives" — the people who are tallied up as working in the financial or life-sciences sector, but are writers or designers on staff. What accounts for this confusion? What exactly is the Creative Economy?

Beth Siegel: The concept is relatively new. Even a decade ago, people tended to look at the importance of the arts and culture in an economy in terms of economic-impact studies — such as reports comparing the presence of cultural institutions to a sports stadium. In the late '90s, Mt. Auburn Associates was commissioned by The New England Council and New England Foundation for the Arts to look at the cultural economy of the entire region. We believed it was a sector that should be examined as an industry, just as we look at biotech or the software industries. Somehow that led to the terminology "creative economy." We defined the Creative Economy as having three elements: creative industries, a creative workforce, and creative communities. We started to look at industries in which creative content defines competitiveness — much the same way people have defined technology industries broadly to include biotech and computers and software, because technology is the common competitive element of those industries.

The idea of innovation and creativity and entrepreneurship as a core part of the Massachusetts economy is not new. Michael Dukakis was promoting this back in the 1970s. What is new is that we're looking at a set of industries where the creative content is the defining element. That is where we get some blurriness in thinking about the word "creativity." But there's really no right or wrong definition.

Greater Boston is home to the second-largest industrial-design community in the country. Largely invisible to the public, industrial designers (also known as product designers) are responsible for the design of mass-produced products from consumer goods to computers and high-tech equipment. Left: Zarafina Tea Maker, designed for Jarden. Design: Continuum; West Newton, Massachusetts. Photo by Sal Graceffa.

Karl Baehr: The common element among all the various definitions of the Creative Economy is not only the presence of innovation but also the power of ideas. Our economy is getting lighter: we're going from steel to software; we're seeing physical GDP decrease; patent activity has increased 75 percent from 10 years ago. Innovation and the ability to monetize ideas are at the heart of just about all of these definitions.

Anita Walker: Something else that distinguishes this industry is that it embraces the nonprofit sector, which other industries typically do not. So our symphonies and our theaters are part of an industry that also includes a commercial or profit-making sector.

The common element among all the various definitions of the Creative Economy is not only the presence of innovation but also the power of ideas. Innovation and the ability to monetize ideas are at the heart of all of these definitions.

KARL BAEHR PhD

Elizabeth Padjen: My impression is that people initially thought of the Creative Economy as comprising only the nonprofits, the cultural institutions. The recent push has been to make them understand that there is also a for-profit component. Is that dichotomy still there?

Beth Siegel: When we began our work, we realized that the old divide between nonprofit and commercial really didn't make sense anymore. There are too many hybrids — such as museums running retail shops — and the sectors have merged. For example, we tend to think of the media industry as for-profit, but it includes National Geographic and NPR, which are nonprofits. The focus is the product, not whether it's delivered by a for-profit or nonprofit.

Karl Baehr: The business functions are essentially the same whether it's a for-profit or a nonprofit entity. Some of the mechanics and strategies are different, of course, but you still have to operate effectively.

Anita Walker: The nonprofits enthusiastically embraced this broader notion of the Creative Economy because they understood the value of being perceived as a significant part of the economy by state legislators and those who fund their work. Being seen as a real economic engine rather than just a nicety has made an enormous difference over the last several years.

Nancy Fitzpatrick: We've been lucky in the Berkshires to have a long tradition of art and culture. Everybody there has come to realize, especially over the last 40 or 50 years, that our nonprofit cultural organizations contribute incredibly to our economic vitality, and also to fostering the creative communities. But not everyone is aware of the role that the for-profit creative businesses

Main Streets with cultural institutions and artist live/work spaces have intrinsic value as vibrant places to live. But they also have an economic value in that they make a community that is attractive to talented people and, therefore, to employers — some of whom might not themselves be part of the Creative Economy.

ANITA WALKER

play. It's still really important to bring these two sectors together in people's minds. For years and years, state government has been geared toward a different kind of industry, and a lot of politicians and policy-makers still don't understand what the for-profit creative industry contributes. There's a lot of work to be done.

I've recently become aware of the importance of home-based businesses to the Creative Economy and the economy as a whole. My parents started a home-based business, Country Curtains [now a mail-order company with retail shops in 12 states]; I confess I had to be convinced that it is in fact part of the Creative Economy. The Creative Economy doesn't necessarily develop products only for the most sophisticated people. It also produces things that mainstream people feel comfortable with and love, things that are sold at a very affordable price. We really have to embrace everybody. Tattoo artists. Doily makers. Anybody who can make a living by doing something that is creative.

Jason Schupbach: We've seen a sea change in just the last year around the way this state addresses the Creative Economy. We already had one of the most advanced Creative Economy policies in the country supporting the nonprofit sector through the work of the Massachusetts Cultural Council. Now we are also developing a complementary policy around the for-profit creative industries, because they often do have different needs. That's what resulted in the creation of my job. I have counterparts in the Office of Business Development who focus on the manufacturing, life sciences, IT, clean energy, and defense industry sectors. By creating my job, Governor Patrick has said the creative-based businesses, such as entertainment — which includes film, TV, videogames, music, and publishing — design, digital media, and advertising businesses, are every bit as important to the state's economic growth as those other industries. We want to make sure that the for-profit creative industries are aware of the resources we have for them right now, and we want to understand what we should be doing in the future to develop these parts of the economy.

Beate Becker: I believe the more important debate is the question of creativity versus innovation, and why the Creative Economy is different from an Innovation Economy. I really want to stress that, when we're talking about the Creative Economy, the creativity is about creative content. For example, engineers are creative, but they're not producing creative content. Creative content is based in culture or the senses: song, drawing, theater. The economist Richard Florida has brought attention to the notion of a "creative class," but his class is so inclusive that he's talking more about a knowledge-based class. He includes accountants and lawyers, who certainly use their minds, but are not necessarily creative workers. They're different from actors or graphic designers.

Elizabeth Padjen: Along with the idea of a creative class, we have to give credit to Richard Florida for popularizing the understanding that creativity has a physical component — that some places nurture creativity better than others.

Anita Walker: Our understanding of what we call "creative communities" is already expanding. Main Streets with cultural institutions and artist live/work spaces have intrinsic value as vibrant places to live. But they also have an economic value in that they make a community that is attractive to talented people and, therefore, to the companies who want to employ them, companies that will bring jobs and wealth to a community. And of course some of those companies might not themselves be part of the Creative Economy sector.

Elizabeth Padjen: Some cities have been quick to understand this. New Bedford, for example, has been getting great press in the last year as a community that is trying to develop its creative sector as a way of defining itself. Matt, what were the roots of that initiative?

Matthew Morrissey: About three years ago, we were pitching a foreign company that was considering New Bedford for a new manufacturing facility that would employ more than 600 people. We were on the short list and had developed a package of incentives that made us as competitive as any other place in the world, really. Halfway into the presentation, the site-location consultant stood up and said, "Wait a second. I get all of this, but I'm originally from Newton, and I can't imagine building a workforce in the city of New Bedford." We had it all, but we were saddled with an outdated perception of the city. And ultimately, we lost out.

So we had to do our homework. The mayor and I sat down and asked, What is it about that experience that encapsulates the challenge facing New Bedford? We don't sugarcoat the reality of a city like New Bedford, but we wanted to figure out how we as a city could use our assets to better tell our story. What came forward was the sense of place.

The idea of the Creative Economy works pretty naturally for New Bedford. For 10 years now, AHA! [Art, History & Architecture, a cultural organization] has been promoting the possibilities of New Bedford to the scores of people who come to its free Downtown Cultural Nights on a regular basis. And when people sense possibility, you inspire their imagination. It is a very important part of retaining folks who are more educated and more prone to civic engagement on their block, in their

neighborhood, and at other levels of government. If you can tell that story to a large enough population, eventually you hit a couple of investors, a couple of site locators, and CEOs.

The direct economic impact of businesses in this sector, however we define it, is real. We have 48,000 jobs and 2,300 businesses in the city, and about 10 percent of that can be attributed, in a broad sense, to the Creative Economy. The Creative Economy isn't going to become our largest employer. But we know that it can be an enormously important, if not *the* most important, inducer of job creation in the city of New Bedford.

Anita Walker: This has important implications for public policy: cities like New Bedford, Pittsfield, and Worcester — and, of course, Boston — have recognized that they want the Creative Economy to be part of their city plan and have named individuals who are part of city government to coordinate these efforts. They understand that it's about business development, but it's also about community development. You really need a holistic approach.

Nancy Fitzpatrick: Something that we're grappling with in the Berkshires is the fact that there is no leadership. In cities, you have a mayor who sets an agenda and pushes for it; you can go talk to this one person. But in the Berkshires, we have two cities and 31 towns, and the towns usually have volunteer leadership. There might be one overworked, underpaid town manager, aided by salt-of-the-earth elected people who are doing their jobs for nothing. You have to try to raise their awareness about the assets that they often don't even know they have.

One of the additional challenges that the Berkshires faces is that there's so much traffic across the borders with Connecticut and New York, in terms of where people live and work, but also in terms of business relationships. We need to find resources that will support this reality. If, for example, we get a grant from the Massachusetts Cultural Council, we can't use it to support a Connecticut enterprise.

Beate Becker: That is an enormous challenge for New England in general; there are many cross-border opportunities. A maritime trail, for instance, doesn't stop at the Massachusetts borders. Nor do the clients or employees of a design firm. How do you find something effective that's more of an overlay, that crosses towns and states without political jurisdiction? And though we don't have a real answer for that, I think that Massachusetts has started to pursue an effective model, focusing on industries themselves as the overlay. The film industry, for example, cuts across jurisdictions, as does the design industry.



Massachusetts is actively promoting entertainment-based industries, which the state Office of Business Development defines as film, TV, digital media, videogames, music, and publishing. Local institutional resources, such as WGBH, WBUR, MIT Media Lab, Emerson College, Berklee College of Music, and Mass College of Art and Design — among many others — have fostered a creative community that is at the forefront of new entertainment media. Right: Arthur. Creator: Marc Brown Studios; West Tisbury, Massachusetts. Image courtesy WGBH.

Jason Schupbach: Some regional organizations are stepping into this role. Berkshire Creative is certainly one, and the Creative Economy Association of the North Shore has also emerged as a real leader.

Karl Baehr: I think New England has other challenges. I came to Boston from Santa Fe, which is one of only a handful of UNESCO-designated Creative Cities. I sometimes think people here have to overcome feeling bad about monetizing their creativity. But there are also regional differences that parallel some of the differences Beate mentioned earlier between innovation and creativity. A famous example is Xerox Corporation, back in the beginnings of Silicon Valley in the '70s. Xerox hired a bunch of high-bohemian, high-tech kids from Berkeley and Stanford. These kids considered themselves artists. It was actually Xerox that invented the mouse, the scanner, the fax machine, the graphical user interface, all that stuff that we've attributed to Apple. But the reason Xerox didn't monetize it was completely cultural — a disconnect between West Coast high-bohemians and East Coast boardroom suits and ties. Xerox would never sell anything called a mouse.

But there's a corollary to the Xerox story: as we consider what a developed Creative Economy could mean, we should also include its influence on creative thinking in other sectors as well. Can you imagine what the MBTA [Massachusetts Bay Transportation Authority] would be like if we had a creative thinker in there anywhere? It would be a radically different organization.

When I listen to President Obama talk about green jobs and high-tech as a priority, I wonder why the Creative Economy isn't being mentioned in that same context.

CAROLE WALTON

Beate Becker: I recently visited Switzerland, which is pursuing some very exciting initiatives. The Swiss are actively bringing together schools of art and design with schools of technology, developing joint curricula and joint laboratories, with some extraordinary results. I'm really concerned that we're not doing enough of that here. Yes, there's the MIT Media Lab, but that's one little node. There's tremendous potential, particularly in the Boston area, for technology companies and design companies to do much more collaboration, both in classroom laboratory settings and in commercial settings.

Nancy Fitzpatrick: We need to take advantage of the naturally collaborative tendency of younger people: I see it in my own children and the people I work with. There are no barriers. There are no secrets. People aren't possessive about their ideas. They share openly. These young people have a new view, and I think it's going to have an enormous, positive influence.

Carole Walton: We can try to support that tendency by providing programs, places, resources — whatever it takes — to encourage cross-pollination. The BRA [Boston Redevelopment Authority] is currently exploring the development of an incubator building for people working in the creative sector.

Jason Schupbach: Metro Boston has the advantage of having so many creative people in a relatively small area. We're seeing a lot of "bump" or "spark" events that get all the creative people in a room to see what happens. Real collaborations and business deals are coming out of these meetings.

Elizabeth Padjen: One of the problems we often hear is that the creative people tend not to be joiners. Or they join organizations that were conceived of years ago that don't recognize the sorts of blurry borders we are discussing here. If we have architects who are also doing textile design and Web design and God knows what else, there's no God-Knows-What-Else Association for them.

Beate Becker: DIGMA [Design Industry Group of Massachusetts] addresses exactly that problem. It's an association that's been heavily supported by the state, with seed funding from the Massachusetts Cultural Council, the Massachusetts Technology Collaborative, and the Boston Foundation — a significant investment in what they see as an emerging design cluster. DIGMA's goal is to bring creative people together to create a common identity and voice, people who are unified by the fact they are all designers despite their individual skills and expertise.

Jason Schupbach: DIGMA is especially valuable because of the exposure it provides for the industry. Most people have no idea of the size or range of the design industry in Massachusetts or how many companies are right here doing amazing work. How many people know that Greater Boston is home to the second-largest product-design community in the country? Look at a firm like Continuum, which is based in West Newton, Massachusetts, with offices in Seoul, Milan, and Los Angeles. They have a billion-dollar product-design wall, with three or four products they designed that have made a billion dollars each.

Beate Becker: Visibility is a very important thing. Here's one simple thing that could be done by the state: Terminal E at Logan Airport, the international terminal, is featuring an exhibition called "Science Swiss." It consists of 25 panels of beautiful photographs and stories of scientists in Switzerland doing incredible work — everything from entomology to geology to genome projects. I walked down there and thought, Wow, this is beautiful graphic design, beautiful photography, beautifully written. All sorts of creative skills employed in the presentation of the stories of these scientists. And I said to myself, Why are the Swiss advertising in Boston's Logan Airport? Why isn't Massachusetts advertising Massachusetts creativity and industries in Massachusetts airports? We can make better use of existing resources to promote our Creative Economy.

Matthew Morrissey: There is another kind of visibility that also has enormous value, which comes through the film industry. There's the promotional aspect, of course — tourists see Boston in a movie

and want to visit. But just as important is the promotional aspect for the residents. New Bedford has had 15 shoots in the last 24 months—all of them small, for indies and cable. But the value for us isn't so much in the money spent by the crews. It's in the impossible-to-measure pride the whole community feels when someone says you're valuable enough to film. When you're dealing with Gateway Cities that have been in a virtual depression for 50 years, you can't overestimate the energy that is created. Film provides a validation—*you're cool!*—that in itself promotes the Creative Economy.

Carole Walton: One of the things that we've done with the Create Boston program is to identify the creative industries in Boston that show significant growth potential. For the last three years, I've been focusing on the videogame industry, increasing awareness of Boston as a digital-media hub and laying the foundation for its continued growth. People are now viewing Boston as a videogame hub; there are currently about 76 companies located in and around Boston. We created the first game-industry steering committee, pulling in video companies from around the state, and convened focus groups to learn more about the challenges facing the industry. They told us that they needed a way to better communicate with each other and asked if we could develop a website. We applied for and received a grant from MCC to do just that [www.poweringupboston.com].

When I listen to President Obama talk about green jobs and high-tech as a priority, I wonder why the Creative Economy isn't being mentioned in that same context. A lot of it has to do with us not marketing ourselves properly, as an industry and as a place. Boston needs to re-brand itself as the fabulous, creative epicenter that we truly are.

The metropolitan Boston region is home to the largest concentration of architects in the country, many of whom design buildings around the country and the world. Local architects are especially known for expertise in institutional, educational, healthcare, research, preservation, and planning projects. Below: Alice Paul & David Kemp Residence Halls, Swarthmore College, Swarthmore, Pennsylvania. Architect: William Rawn Associates; Boston, Massachusetts (recently named top firm in the country by *Architect* magazine). Photo by Robert Benson.



Karl Baehr: If Boston's really going to be a creative city, we've got to understand what's important to these people who aren't joiners. As a city, we need to be creative comprehensively. Not just in terms of infrastructure like roads and WiFi. We need to be creative with bureaucracy. We need to create an environment that we can market. Boston is one of the greatest cities for entrepreneurship in the country. The creative minds are here, but they leave. Why is that? Because we have yet to create this genuine creative environment that these folks are looking for. They're looking for stimulation. They're looking for individuality. They're looking for openness. They're looking for something beyond a job, something beyond even a career. It's cultural.

Jason Schupbach: I would like to debunk the myth, though, that all creative people are outsiders. I think that's almost completely false. If anything, they're very interested in being part of a community of people who have similar interests. One reason why international companies are starting videogame companies here in Massachusetts is because we have the fourth largest gaming community here, and they want to be part of that community and connect with the talent that's already here. It's a highly networked community where everybody knows each other. That is what people are really looking for when they're looking to be part of a creative industry.

Carole Walton: It's important to remember that the whole game-industry influx here was not organic. It was part of a definite strategic plan. All of a sudden Boston is seen as the premier location for videogame events, but that didn't just happen overnight.

Elizabeth Padjen: What do people who are starting Creative Economy businesses want most? What do they ask for?

Carole Walton: They're looking for affordable space. They're looking for funding. They're looking for an opportunity to be with other folks in creative industries who think the same way they do.

Jason Schupbach: The BRA has been really innovative on that front—it's one of the few entities in the country that actually started a fund specifically to support Creative Economy businesses.

The connection between affordable, interesting space and the Creative Economy shouldn't be overlooked. One linkage that would create enormous opportunity would be to lift the current $50-million limit on the historic-preservation tax credit.

MATTHEW MORRISSEY



Massachusetts is considered a hub of footwear design. Brands with local presence include Reebok, New Balance, Puma, Clark, Stride Rite, and Saucony — as well as many smaller companies. The footwear industry employs many in-house designers, as well as independent product designers and footwear design consultants, who often also design for well-known fashion labels. Above: Puma Hawaii XT. Design: Puma; Westford, Massachusetts. Photo courtesy Puma.

Carole Walton: We also have Marine Industrial Park, which is owned by the BRA, and right now we're creating a cluster of creative businesses there. So we can give them space at an affordable price and get them all together in that environment.

Matthew Morrissey: The connection between affordable, *interesting* space and the Creative Economy shouldn't be overlooked. One thing that the current state administration does very well is to understand linkages, and one linkage that would create enormous opportunity for the Creative Economy in cities outside Boston such as New Bedford would be to lift the current $50-million limit on the historic-preservation tax credit. When you look at the seven states that have uncapped historic-preservation tax credits, you see an enormous spike in investment capital. When you dig deeper, you discover that the Creative Economy is fueling a huge part of the demand for space in historic buildings — businesses and nonprofit offices, residences for the people who work in them, and services for the residents and businesses. I think we would see similarly enormous spikes here in terms of redevelopment of old mill buildings. I'm working on a 300,000-square-foot mill project right now that would house a printing and digital-media firm, a high-tech firm, and artist live/work space. About 200 jobs, many of them in the Creative Economy, would be brought in or created as a result. But holding all three of those interests together over a period of two or three tranches of funding under the current historic tax credit program might be too hard. No one's fault — that's the system. But if the cap were lifted now, that building would be filled.

Elizabeth Padjen: Except for Gateway Cities like New Bedford — the former mill cities of Massachusetts — this region is not known for affordable space or affordable housing. How can we be competitive relative to other regions of the country?

Beate Becker: If we're debunking myths, I want to debunk the one that people leave because of affordability. Where do all these creatives go? They go to New York and San Francisco, which are not exactly havens of affordable real estate.

If you ask people what they need and why they move, the answer is jobs. Work is the real issue. It's not just about educating creative people and getting them in a room together to generate a lot of ideas. If there is no market for those ideas, for those companies or products, then they can't continue. That's an issue that we're especially seeing now, with creative industries taking a big hit in this economy. If people aren't buying those services and those goods, it's a problem. So it's not just about growing the Creative Economy itself, it's about growing the demand for the Creative Economy.

You do that in part by developing awareness of the added

value that design can bring to an industry. Introduce designers to healthcare people and raise the issue of return on investment. What's the value of design to healthcare? Ask Apple the value of design, or Procter & Gamble. That billion-dollar wall at Continuum? Continuum developed the Swiffer for Procter & Gamble. Getting the other industries here — healthcare, financial, bioscience, high-tech — to employ creatives is what will keep people here. We've got the talent. We need the work.

Elizabeth Padjen: And in fact, if you look at the websites of many local product-design firms, in addition to what you might expect — household goods, electronic devices, consumer goods — you will find an astonishing number of sophisticated medical devices, which is no accident.

Beth Siegel: That's right. There are some fascinating crossovers, such as a company in the Berkshires that used to do computerized special effects for the movie industry that now employs 100 people doing medical simulations for the life-science industry.

Anita Walker: I also want to do a debunk. Every state worries about the brain drain. The fact of the matter is, young people move. One of the distinguishing features of the Creative Economy is that it's highly mobile. It's not agriculture, which is stuck in the ground; or fishing, which is stuck in the ocean; or oil wells, which are under the ground. You have to accept the mobility factor and work with it.

Nancy Fitzpatrick: I concur with Anita. I cringe every time I hear the president of Berkshire Community College say that we need to keep our young people in the Berkshires after they graduate, because I as an employer do not want to hire somebody to work at the front desk of Porches who's never been anywhere else, who can't get him- or herself down to New York and back. I think it's great that new people come and young people go; they might come back and they might not. Mobility is something that we need to learn to value; we don't necessarily want to keep people where they grew up. That's almost un-American.

Elizabeth Padjen: In this economy, a number of people are launching businesses on their own, but what do they really know about entrepreneurship? It may even be worse for creative people, who often seem to believe that being creative and being successful in business is oxymoronic. On the other hand, the Creative Economy seems to present an opportunity to create a different business model — to work in very fluid ways that are outside traditional corporate structures. Karl, your students come to Emerson because they have a love for some kind of creative endeavor. How do they respond to the idea of entrepreneurship? How can we encourage creative people to think about the opportunities that they have in the business world?

Karl Baehr: The fundamental problem is that rule number one of business — "it's business, not personal" — does not apply to an entrepreneur. It's very personal. It's not their business education that compels them to put their life savings into a business and work 15 hours a day, 12 days a week to make a go of it. What motivates them is the passion for an idea. And the moment that inherently right-brained, artistic, emotional element enters into the equation is when an entrepreneur can get off track. So you have to do the reverse: artists can already envision the house that they want to build, but you have to teach them how to use a hammer and nail, and when it's appropriate to use a screwdriver, and what the pliers do. Those nuts and bolts — the law, management, learning how to network and partner, communication, finance — are all essential. Artist-entrepreneurs come to realize that, in order to make their vision become real, they need to learn these things, just as they need to learn how to use Pro Tools software if they're musicians or a paintbrush if they're illustrators. It's the same creative passion; it's just a different tool. And that makes it less foreign to our students. Our program is full, because our students realize that there is this thing called business out there that they need to understand.

This economy is a great time to be an entrepreneur, to be in charge of your own destiny. It's especially true of those who are part of the Creative Economy. What better way to make your way in the world than by doing what you love and creating something, whether it is software or art or music? And understanding enough about how to navigate the waters of business allows you to do that. "Brain lateralization" is the technical term: it's making the right brain work with the left brain, and learning how to shut off the right brain just long enough to say, Wait a minute, I'm injecting too much of my emotion into this; I need to think a little more critically. Because the passion can blind you.

Anita Walker: We can't disconnect the Creative Economy from K-12 education. If we relegate children to rote memorization and high-stakes testing, they're not going to be ready for the Creative Economy of the future. Increasingly we're seeing art and music squeezed out of the curriculum in favor of high-accountability subjects. These kids will need to be both critical and creative thinkers, to be comfortable with ambiguity and with tackling a problem that doesn't have a right answer and has never been solved before.

Jason Schupbach: Another important piece of the youth workforce-development picture is validation — helping parents understand that if their kids are interested in videogame development, for example, they can have a job in it someday. Sometimes people don't know that these are real and, in many instances, high-paying [jobs]. Economic-development folks can create the jobs but we need people to fill them. We have some empty jobs locally in the Creative Economy even now. We can't staff every firm that wants to come here.

Elizabeth Padjen: John Maeda, the new president of Rhode Island School of Design, said that one of his great challenges is dealing with the parents' reaction to a kid who wants to go to art school.

Beth Siegel: It would really fill a gap if all the art, music, communication, and design schools got together and asked, "How can we help people understand the occupational opportunities?" — and then took that show on the road to high schools. Because, I can tell you, high-school counselors are not telling these kids about the career potential of these creative disciplines. ■



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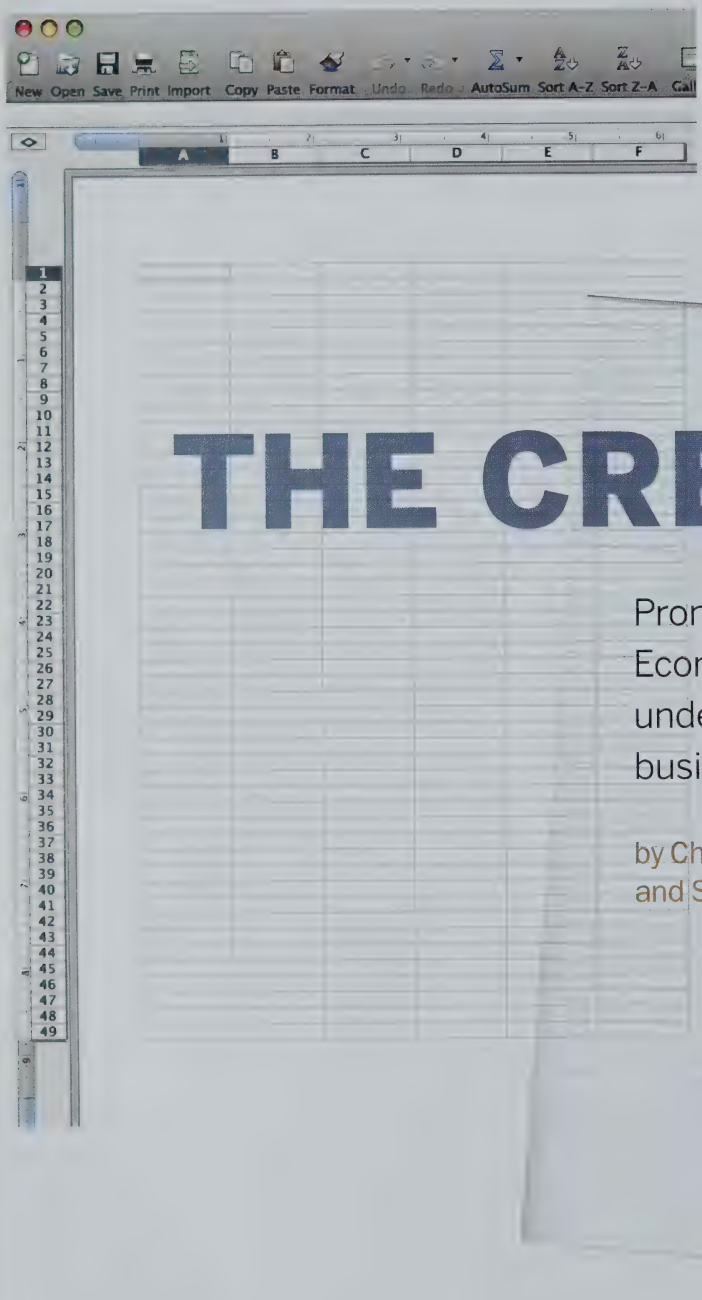
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THE CREATIVE

Promoting the Creative Economy requires a new understanding of creative businesses.

by Christine Sullivan and Shelby Hypes

Seven misconceptions about the way we work

ENTREPRENEUR

What do a self-employed architect, a game designer, and a new-media consultant have in common? They're all part of the Creative Economy, they're likely to be proprietors, and they don't get the recognition they deserve. They're under-counted, under-estimated and under-served — because they are the victims of serious misconceptions.

MISCONCEPTION #1: **The Creative Economy is about the arts.** Yes, actors, musicians, and visual artists are included, but it doesn't stop there. The Creative Economy consists of those industries that have their origin in individual creativity, skill, and talent, and that have a potential for wealth and job creation through the generation of ideas, products, or services. How this gets interpreted at a local level varies. In the Berkshires, for instance, tourism and the arts are indeed the backbone of the economy. But in another tourist destination, Essex County, the top Creative Economy clusters include design, research and development, and advertising. The key is in the name: creative. Jobs whose stocks in trade are creativity and innovation are likely to be part of the Creative Economy.

MISCONCEPTION #2: **The Creative Economy centers on nonprofit organizations.** In fact, according to a 2008 study of Boston's North Shore, the Creative Economy represents 10 to 12 percent of that region's private sector (non-government) employment, providing jobs for nearly 20,000 people through more than 2,000 enterprises. That's larger than the share of biotech (2 percent) and manufacturing (7 percent) industries within the metropolitan Boston economy.

It is when one combines the impact of the Creative Economy with that of self-employed proprietors and entrepreneurs that this overlooked yet powerful economic engine really picks up steam. In 2006 (the most recent year for which data are available), *proprietors represented one out of five jobs in Massachusetts.* These are the sole practitioners, husband-and-wife teams, and micro-businesses that are part of our daily business lives. While exact numbers of proprietors among design professionals are not available, one statistic suggests that proprietors are a significant presence in the practice of architecture: among the members of the Boston Society of Architects, there are 475 sole practitioners and 200 firms of two or more employees.

Proprietors are flying below the radar for a number of reasons. They may have an Internet business or a home-based enterprise with no physical visibility, especially in towns where the prohibition on home-based businesses has never been changed. They may not have filed a DBA, so that their town or city does not know they exist. Their customer base may not be local, so they have little incentive to join a chamber of commerce or other community business group. And they have few advocates to speak for them.

MISCONCEPTION #3: **If proprietors were important, they'd get more attention in state economic reports.** The truth is that, astonishingly, we're not counting proprietors (who account for one in every five jobs in Massachusetts, remember) at all in state economic reports. That's because proprietor data are filed only with the individual's federal tax return each year. When proprietors *are* considered, the doom-and-gloom story of statewide job losses becomes one that actually offers hope in grim economic times. The number of proprietors in Massachusetts grew 33 percent between 2001 and 2006, an average of more than 35,000 a year. That number was large enough to counter the loss of wage-and-salary jobs and result not in the 2.6 percent decrease in the number of jobs reported in the media for that period, but a 2.3 percent increase!

Although data beyond 2006 are not yet available, it is more

Becoming a proprietor and joining the Creative Economy is not only an increasingly viable employment option for individuals, but also a source of economic growth for Massachusetts.

than likely that both the number of proprietors and the growth rate of proprietors in many industry sectors are increasing during the current recession. It is during recessions that many laid-off wage-and-salary employees test the waters of entrepreneurship, some out of necessity, some taking advantage of their unemployment to realize a long-held dream.

MISCONCEPTION #4: **Proprietorships, especially those in the Creative Economy, are not "real" businesses.** According to the recently released study *Proprietor Employment Trends in Massachusetts: 2001 to 2006*, which was also the source of the one-in-five statistic above, proprietors who work alone outnumber those with wage-and-salary employees. This is not to dismiss proprietors with employees; they grew by nearly 28 percent between 2001 and 2006. (The full report is available online at www.ceans.org.) These are not necessarily one-person, kitchen-table hobby operations. They are small companies who choose not to incorporate for a variety of reasons, frequently taxes. Among them may well be the next killer iPhone application, the next Design Within Reach, or the next Sundance award-winner. More important, not to consider creative entrepreneurs as having real businesses is to buy into a misconception with significant consequences for how local, state, and federal governments allocate resources.

MISCONCEPTION #5: **Most proprietors are people temporarily freelancing until they can get a real job.** Those who believe this are missing a dramatic and permanent shift in how we work. There are several factors driving this, the most compelling of which is the Internet. With a desk and a laptop, an individual can now run a global business from home. This could never have happened 20 years ago. Computing power and Internet accessibility have created a "portable economy." When the restrictions of physical locale are removed, entrepreneurs can collaborate with many more people, extend their customer reach, and draw on a far broader base of resources.

They can also work in new patterns. Tina Brown, the former editor of *Vanity Fair* and founder of *The Daily Beast* website, refers to the "gig economy" as one in which people don't hold a single job, but take on assignments or gigs, much as a musician does. Somewhat related to this, the self-employed are increasingly adopting the Hollywood model used in film-making — people with the specific skills and talents needed for a project come together for that assignment and then disband.

MISCONCEPTION #6: **People in the Creative Economy are, well, "different."** In some ways, they may well be. But even if they don't want to be grouped with the "suits" of the business world, artists, designers, and advertising copywriters have a lot in common with their peers in traditional corporate environments: they need business skills and they need political support for their business endeavors.

Because the Creative Economy and proprietors are under-reported and underestimated, it's not surprising to find that they're also under-served. Little research has been done to identify the economic impact of these companies, and no research has been conducted to identify their needs. But, as the director of the Enterprise Center at Salem State College, working with entrepreneurs and small businesses, I have a unique vantage point. I see talented people daily who are seeking skills they need to run their business. I hear them talk about the premium they, as individuals, must pay for healthcare, the limited options they have for retirement savings, their need for tax relief and for better access to credit.

MISCONCEPTION #7: **There's little you can do.** There's a lot you can do, and it may start by recognizing that you yourself, or the businesses you work with, are part of the Creative Economy. Creative entrepreneurs can form coalitions and associations to advance and support legislation and policy changes that will support their endeavors. Through organizations such as the Creative Economy Association of the North Shore, you can individually and collectively raise awareness of the Creative Economy's contributions as a sector and of the need to nurture the micro-businesses that contribute to the industry's vitality. These kinds of businesses have historically received little recognition at the government level.

The growth of the Creative Economy and the increase in proprietor employment in Massachusetts are phenomena not to be taken lightly in their own right. In combination, they tell us we're looking not at a transitory fad, but at a permanent sea change in how we work. Technology has empowered the creative entrepreneur and opened the floodgates to new opportunities for self-employment. Becoming a proprietor and joining the Creative Economy is not only an increasingly viable employment option for individuals, but also a source of economic growth for Massachusetts.

There is a new recognition of this within the Commonwealth. Massachusetts recently established the Creative Economy Council, chaired by the Secretary of Economic Development, and is the first state in the country to have a Creative Economy Director. The Massachusetts Cultural Council has also been very active in the promotion of this business sector. But the ultimate success of the creative industries in this state depends upon the energy of individuals. We need more voices in the choir. Join in, and help get the word out. ■

Christine Sullivan is the director of the Enterprise Center at Salem State College, the state's preeminent provider of services and support for small businesses. She is also a co-founder of the Creative Economy Association of the North Shore and was instrumental in the establishment of the state Creative Economy Council, of which she is a member.

Shelby Hypes is the principal of Scarlet Letters in Salem, Massachusetts and a board member of the Creative Economy Association of the North Shore.

HOW TO HANG A SHINGLE

Whether by need or by choice, this economy is prompting designers to go out on their own. How do they find what they need to know? And how can struggling small firms and solo practitioners get smarter about business?

BASIC BUSINESS

The US Small Business Administration
www.sba.gov
Lots of great info, in a user-friendly format. This is the basic how-to business course that design schools left out.

The Association of Small Business Development Centers
www.asbdc-us.org
Helping entrepreneurs "realize their dream of business ownership." Resources and free one-on-one (!) business counseling across the United States, including Massachusetts (see below).

Massachusetts Small Business Development Center Network
www.sbdc.umb.edu
The local office of the ASBDC. Bear with the website — it's extremely useful with FAQ, business guides, and forms all in one place.

Center for Women & Enterprise
www.cweboston.org
The nonprofit CWE is "dedicated to helping women start and grow their own businesses." It offers extensive workshops; note that scholarships are available. The Resources tab features a robust menu of information for those of either gender.

Enterprise Center at Salem State
www.enterprisectr.org
Unlike typical B-school programs, the Enterprise Center focuses exclusively on small business, helping from startup onward. You don't even have to go to Salem to access the online workshops.

CREATIVE INDUSTRY SUPPORT

Massachusetts Office of Business Development
www.mass.gov/mobd
On this easily navigable website, visit the Business Resource Team, and the "creative industries" specialist. Don't be put off because this is a state program; the staff is committed to working with individuals, including answering *your* e-mail. Jason Schupbach is the Creative Economy industry director: 617-788-3602; Creative.Economy@state.ma.us.

Design Industry Group of Massachusetts
www.digma.us
DIGMA is a new organization promoting the state's design economy. If you design buildings, landscapes, products, graphics, furniture, fashion — *anything* — you have a new friend. Beate Becker is the director: 781-789-8919; director@digma.us.

Massachusetts Cultural Council
www.massculturalcouncil.org
The MCC state agency promotes the arts and humanities and supports nonprofit cultural organizations across the state. It's known as a grantmaker and a good clearinghouse; check out the Services and Partners resources.

Compiled by Gretchen Schneider AIA

REGIONAL RESOURCES

Create Boston
www.createboston.com
The Boston Redevelopment Authority's "Create Boston" initiative helps creative businesses secure financing, find real estate, navigate city agencies, and more. Carole Walton is the manager: 617-918-4259; carole.walton.bra@cityofboston.gov.

Berkshire Creative
www.berkshirecreative.org
Resources include legal clinics, intellectual property talks, job listings, networking events — for new solo practitioners as well as bigger, established organizations. Helena Fruscio is the director: 413-822-8324; helena.fruscio@berkshirecreative.org.

Creative Economy Association of the North Shore
www.ceans.org
CEANS promotes the Creative Economy and fosters networking and collaboration among creative businesses. The Jobs and Talent board is like Craigslist — but better. Jennifer Toomey is the director: 978-542-7528; jtoomey@enterprisectr.org.

The committees of the Boston Society of Architects are a terrific resource and open to non-members, too. The Residential Design Committee and Small Practices Network each address issues that those just starting out may find interesting. Meeting topics change monthly, and vary from discussions of insurance or hiring staff to technical workshops and the changing building code. Find them, and others, under "Committees" at www.architects.org.

Build Boston and **Residential Design and Construction**
www.buildboston.com
These Boston Society of Architects events include dozens of workshops on how to run a small design firm.

WORK OPPORTUNITIES

The Central Register
www.sec.state.ma.us/spr/sprcentral/infocent.htm
This is a weekly listing of large and small public-work projects being put out to bid for design or construction in the Commonwealth. It's available electronically by subscription, and in print free through most public libraries.

The UrbanArts Institute
www.massart.edu/x470.xml
UrbanArts maintains a free database of over 2,000 artists, especially those who work on public art projects; included artists receive a weekly listing of public-art opportunities. Christina Lanzl is the project manager: 617-879-7973; christina.lanzl@massart.edu.

Design Opportunities
www.nbnservice.com
The National Building News Service offers a free quarterly preview listing of upcoming projects by major corporations, educational institutions, and healthcare facilities for which designers have not yet been selected.

PRACTICE TOOLS

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Cities, regions, even entire nations, are pursuing the Creative Economy. What can we learn from Singapore, Glasgow, and Ogulin?

by Tom Borrup

Compare / Contrast



Glasgow is internationally recognized for the success of its strategic focus on the arts and culture to revive a declining post-industrial economy. Since its designation as European City of Culture in 1990, the city's promotion of arts programs and investments in cultural institutions have built upon its historical and educational assets to transform the Glasgow "brand." Designated the UK City of Architecture and Design in 1999 and the UNESCO City of Music in 2008, Glasgow today enjoys a healthy, diverse economy. The city's marketing office reports that Glasgow has been called the UK's "hippest and most happening city" by *Travel & Leisure* magazine and "one of the top three business centers in Europe" by *Fortune*. Photo by Robert Pool.

Successful economies have always been creative. Why is this 21st-century Creative Economy any different? Global exchanges and the clashing and blending of cultures have been documented and analyzed for at least 10,000 years. Technological innovations affecting all of society resulting from aesthetic curiosity (or "art for art's sake") can be traced back at least as long. Likewise, cultural tourism — people traveling to learn and explore, as well as to trade and exchange ideas — isn't new either. Nor was Richard Florida, the economist who popularized the idea of the "creative class," the first to notice that economic prosperity and concentrations of creative people go together.

So what makes this era so special?

In a word, speed. We communicate across the globe at the speed of light. We, and our goods, move across thousands of miles overnight. Global cultures blend daily in the workplace, on the streets, and at the farmers market. Artists and inventors blog, create, and reinterpret in virtual and physical space 24/7. Innovation — the fuel for entrepreneurs — and the drive to find and experience the new have been with us since the dawn of civilization. Now, they are in our faces, at our fingertips, and changing before our eyes like never before.

"New ideas must use old buildings," wrote Jane Jacobs. However, the Creative Economy requires more than old buildings, artists, bohemian neighborhoods, and tourists. Cities, urban regions, and small towns looking for sustainable creative economies in a global marketplace must also look at their social and community fabric — things that do not change overnight. They need to examine their: clarity and authenticity of place ("brand identity"); civic and corporate cultures and institutions; ability to adapt to constant change; capacity to welcome and integrate new and different people and ideas; and ability to cross boundaries and find synergies between industries and disciplines.

Contrary to many notions and fears around globalization, success is not found in homogenization. Cities and regions that are able to distinguish their brand and build on unique skills, products, services, natural resources, and other assets are more likely to succeed. Creative branding or identity development is increasingly critical for *places* as much as it has become for *products*. More than a PR campaign, good branding requires finding widely shared authenticity rooted in the history, people, and evolving story of place.

The Croatian community of Ogulin with its castles, magical landscapes, and local literary figures reasserted its **brand based in history and authenticity**. Renowned for the fairy tales that were written there, the community has become a cultural tourism destination and has reignited its intellectual and creative energies, thus reinvigorating its self-esteem and its fortunes. In contrast, Hamilton, New Zealand, ignoring its indigenous heritage and agricultural roots, is trying to re-brand itself with the slogan "From Cowtown to Wowtown." A likely flash in the pan.

Healthy civic and corporate cultures make an enormous difference. Chicago is a city that works — even if its political capital is tightly held. A diverse economy and inclusive civic institutions have kept it growing and stable. Similarly, visionary and effective leadership is credited with reviving the UK's Newcastle Gateshead area, inspiring citizens, attracting investment, and assembling successful Creative Economy elements. On the flip side, rife with corruption and the inability of their leaders to fully motivate and engage people, are the cities of New Orleans; Bridgeport, Connecticut; and Camden, New Jersey — which only look good next to Cartagena, Baghdad, or Nairobi.

Over the past couple of decades, the Scottish city of Glasgow has transformed itself with new industries and trade partners for at least the fourth time in its history. Meanwhile, Detroit and Flint, Michigan struggle massively to **adapt to changing conditions**. These US cities were literally built around an industry cluster, markets, technologies, and labor strategies whose relevance has waned.

While still a young metropolitan region, Silicon Valley and its urban center, San José, demonstrate enormous **capacity to integrate new ideas and people** through a cluster of industries that have morphed a couple of times in as many decades. The business and social construct of the "wiki" emerged there not only as a functional tool to incorporate the best ideas quickly from across the globe, but also as a way of re-thinking how business is organized. Welcoming people and cultures from around the world, San José also exhibits one of the highest rates of minority business ownership among major American cities and has perhaps the most diverse mix of small and medium-sized nonprofit arts and culture organizations. Meanwhile, in Copenhagen, Creative Economy proponents lament the resistance to newcomers among the native-born and see evidence that xenophobic attitudes have clogged the city's economic development pipeline.

Creating **synergy across disciplines and sectors** can be seen in some of the most productive small and large places. Legendary college president and Tennessee Valley Authority architect Arthur Morgan wrote about his small Ohio college town of Yellow Springs in 1953. In addition to one of the most concentrated and active small arts communities in the US, this village of 3,500 spawned businesses producing innovations in aluminum casting, seed hybridization, industrial design, and high-precision thermostats as well as water-monitoring devices, industrial surface-plates, high-stress rubber bearings, and the first-known EMT training program. The remarkable list goes on. Morgan concluded these industries sprouted from a quality of life that included interdisciplinary education in which both art and science were central, inclusive racial and labor relations, and a highly engaged civic community. Morgan was perhaps the Industrial Age's Richard Florida. By contrast, and on a wildly different scale, Charlotte's massive banking industry leaves that city in a precarious position in what is essentially a one-industry town.

A report published in February 2009 by the UK's National Endowment for Science, Technology and the Arts predicted that the creative sector in that country will grow at an average annual rate of 4 percent during the next five years — more than twice the rate of the economy as a whole. It will employ more people than the financial sector by 2013, or as much as 7 percent of the workforce. (Similar data have not been studied for the US.)

Too many US communities hoping to tap this growing sector have fallen for easy solutions. City after city has rushed into a simplified version of Richard Florida's three Ts, trying to attract Talent and Technology and showing little understanding of Tolerance. But clusters of "creative class" workers and the industries they populate are not enough.

This temptation to oversimplify, and thus misunderstand, the Creative Economy is common. In many US cities, institutional arts interests have dressed up the Creative Economy as a way to garner more money for the arts. A healthy creative community is a necessary ingredient for a healthy economy — as are healthy civic and corporate cultures. However, big symphonies, operas, ballets, and museums full of Renaissance paintings do not necessarily encourage creative behaviors among residents who come from all parts of the world, nor do they excite most young high-tech workers.

Similarly, cultural tourism alone is unlikely to transform an economy — apart from Orlando, Florida, a place dependent on a couple of California-based corporations. While their theme parks are unlikely to go anywhere in the foreseeable future, if and when they do, the region will need more than Ghostbusters.

Looking for quick fixes, some cities have tried to re-package creative industries, promoting "creative clusters." Others have fashioned or built bohemian enclaves or arts districts to attract young hipsters. Clusters may fuel a raging engine for the short term, but cities that have focused on one product have not fared well over time. Their precipitous declines have been as dramatic as their rising fortunes. Clusters can be significant parts of an economic mix if they operate in a creative and permeable environment and interact vigorously with other industries and sectors.

Still other cities have put all three together — a robust arts community, a "cool city" image, and a cluster of creativity-based businesses. In some places, this has made a difference. A community with healthy self-esteem, where people get along and work together to accomplish civic ends — a community that can pull off this three-part strategy — already has in place most of the needed ingredients and is on the right path.

But an even more sophisticated understanding of the mechanisms that drive creative economies requires an even broader, more holistic view. Two countries, with very different histories and cultures, have recently embarked on initiatives that merit attention. Seeing the need to maintain a balance between strategies and assets, both Sweden and Singapore have articulated plans for nurturing their creative industries. In a nation not well-known for tolerance, Singapore's National Arts Council prescribes the "5-C" plan to heighten the creativity of this already prosperous nation. Culture, Competency, Connectivity, Capital, and Conditions provide the framework it hopes will ensure a perpetual place atop the economic food chain. A program laid out by Sweden's Knowledge Foundation has many parallels: Education and training, Research, Industry, Business collaboration, and Arts/Culture. This "ERIBA Model" is based on a circular approach of stimulating creativity and the arts, providing the forums, cross-sector research, and collaborative systems that allow business and industry to gain from innovations and innovative behaviors. Both Singapore and Sweden are thinking in terms of larger systems that embrace all their assets.

Cities and regions looking for sustainable creative economies in a global marketplace must also look at their social and community fabric — things that do not change overnight.

This is the challenge that faces Massachusetts today as it considers its Creative Economy. While Boston has reinvented its economy several times by drawing upon its key assets of geographic location and intellectual capital, it has also lost out on opportunities because of its tightly held culture, as AnnaLee Saxenian demonstrated in her 1994 book *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Boston's 19th-century business models, rigid proprietary practices, and paternalistic corporate culture, she argued, did not provide fertile ground for invention, risk-taking, and entrepreneurial enterprises. Meanwhile, a very different and open environment took off in Silicon Valley.

But the Boston region, indeed the entire state, is today a very different place from what it was in 1994. The economic growth of the last 15 years has coincided with the expansion of entire industries — biotechnology, videogames, new media — that did not exist a few decades ago, that have brought with them fresh faces and fresh business practices. The corporations that once ruled Boston are largely gone — sold or relocated. Demographics have changed, with a larger immigrant population. Greater Boston is not Silicon Valley, but it is not what it once was, either. It is much better poised to do the necessary work — to examine and promote its identity, functional capacity, adaptability, inclusiveness, and synergies — and to invent the necessary means. After all, what's a Creative Economy without creativity? ▪

Tom Borrup is the principal of Creative Community Builders in Minneapolis. The former executive director of Intermedia Arts in Minneapolis, he is the author of *The Creative Community Builder's Handbook* and is a faculty member at the UMass Amherst Arts Extension Service.

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Arts & Minds

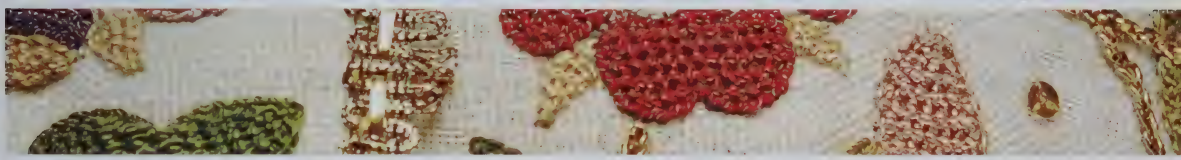
Profiles in the Creative Economy

by Deborah Weisgall

I spoke to four people who solve old problems with new methods, who discover old solutions to new problems. They are combining interests and information in innovative ways. In doing so, they are building new communities. None of this work happens in solitude. It all requires a critical mass of resources: intellectual, technical, economic, and artistic.

While the reach of these enterprises is international, they are rooted in local communities that encourage cross-fertilization between different kinds of expertise, that find new paths for knowledge and intuition. Art and commerce are once again becoming more comfortable with each other. In this new atmosphere we are seeing the results of a convergence of these two basic human impulses. It is a whole new world.

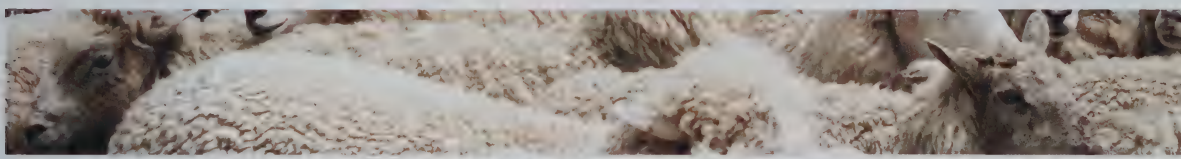
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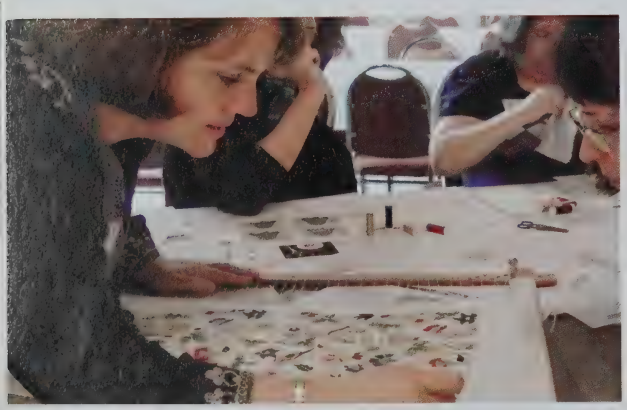


Deborah Weisgall writes about the arts for *The New York Times* and other publications. She is the author of *The World Before Her* (Houghton Mifflin, 2008).

Tricia Wilson Nguyen

principal of Fabric Works, Thistle Threads, and Redefined, Inc.

Tricia Wilson Nguyen combines an undergraduate interest in anthropology and archaeology, an undergraduate degree and doctorate in materials science and engineering — work on optical devices and high-tech fibers — with a lifelong passion for needlework and a knowledge of historical embroidery. She operates three companies simultaneously: Fabric Works is an engineering consulting company focusing on product design; she has designed textiles for use by the military, and this year collaborated with Polartec to launch a heated jacket. Redefined, Inc. uses current technology to manufacture "sewing cards," Victorian perforated papers used for cross-stitch designs, which became too expensive to produce at the end of the 19th century. In her capacity as the founder of Thistle Threads, she designs reproduction threads and teaches historical embroidery techniques. She has served as a textile consultant to the Metropolitan Museum in New York and is currently working with Plimoth Plantation.



Deborah Weisgall: You seem to combine your interests seamlessly, as it were: your scientific background, your interest in handwork, your historical knowledge. Expertise in one field flows into the other. How did this come about?

Tricia Wilson Nguyen: My lives converged when I was asked to solve a problem of integrating situational awareness systems, which combine GPS, location of squad members, information about terrain, and physiological monitors into an electronic map, a "heads-up display" that can enhance a soldier's ability to negotiate the surroundings, possibly using the field of electronic textiles. The natural solution was to route the cables through the fabrics they wore, instead of using plastic cables, which would be snag hazards. This is when I discovered the work going on in the not-yet-named field of electronic textiles. It was a natural for me, as I had optics, materials, systems, and high-tech textile experience. It was my knowledge of Victorian-era millinery that gave us the idea of making textile-based USB cables in a ribbon format; this led to my first manufacturing partners.

Because electronic textiles fuses two very disparate fields, everyone involved was at some disadvantage. As both an engineer and embroiderer, I could understand both technology bases. The engineers respected my ability to thread a needle, and people involved with the textile world trusted me because I could speak their language. I was stunned that when we met with the Army, my colleague would bring up my historic embroidery business as a technical qualification.

And my technological edge has allowed me to distinguish my historical research because few art historians would approach the problems in the way an engineer would. I can sometimes clear my head and look at objects from the standpoint of "how and who" because I have both hands-on experience and the technological means to translate that experience into a new analytical technique.

In product development, you look for short-run manufacturing facilities that can make complex metal threads; I do the same thing — work with artisan manufacturers — in the historic threads area. Often the technique or calculations I do for one area can be immediately translated to the other. It's important to understand product design and the economics of manufacturing. In the historic embroidery or restoration fields, the people who need new threads usually aren't prepared to help the manufacturer develop a market that can justify the effort involved in making such a thread. I have founded several outlets for that kind of development, though, so I can help engineer the product and market it for hobbyists. Then I turn around and introduce some of them to the e-textiles field.

Deborah Weisgall: You proceed from the premise that art and science and commerce can coexist and reinforce each other.

Tricia Wilson Nguyen: I've realized that to make true progress when you don't have a great number of resources at your disposal, you have to make art, science, and business coexist. I don't see them as antithetical to each other. Let me give you an example: When I have to grapple with the problems of scaling-up and capitalizing a new thread, I start thinking about the inventory costs associated with the range of materials that go into making that thread. Weeks later, I see a piece of complex historic embroidery with as many as eight variants of complex composite threads — threads we have trouble making today — in about 10 color combinations each. Now, historians attribute this embroidery to 12-year-old girls. Knowing that these threads were made of expensive components,



I start thinking about a 17th-century mercer [dealer in textiles] and his need to turn over inventory by selling to 12-year-old girls. Something just doesn't jive. I think, maybe it wasn't a girl, but a professional. Then I think about manufacturing on demand, and whether a small number of raw materials could be turned into such a large variety by using the spinning-wheel technologies they had available to them. Then I wonder again if we could use such techniques today to reduce the need for a range of reproduction materials by teaching hobbyists to make their own variants from simple components. And that leads me to make short runs of e-textiles threads to try out concepts for antennas in a cost-efficient manner. So commerce educates history, which, in turn, educates technology development. It's synergistic, and usually it revolves around the reality of current and past economics.

Deborah Weisgall: How important to the success of your enterprises is the community in which you live — not so much the neighborhood, but the intellectual community?

Tricia Wilson Nguyen: I couldn't be doing what I am doing if I didn't live in such an entrepreneurial high-tech area that is also at a nexus of textile history. Many of my clients or producers are remnants of the textile industry in Massachusetts. Living close to them allows me to raise a family while keeping my engineering skills sharp. Also, the two most important collections in the US of the type of embroidery I research are within three hours of home, and England is only an airplane ride away. I often double-up on business trips; I see a historic collection and research primary sources at libraries when I travel to teach embroidery or visit clients and manufacturing partners.

When my husband and I were deciding where to live — we have the dual PhD problem — there were only five places that could support our fields. We chose Boston because we'd both gone to MIT. This fall, I'm guest lecturing at the Media Lab there — talking about 17th-century embroidery to an engineering group. I couldn't do that type of cross-disciplinary work in most cities.

> I've realized that to make true progress when you don't have a great number of resources at your disposal, you have to make art, science, and business coexist.

Deborah Weisgall: You have taken what has been considered "women's work" — though it was not in Tudor England — and added to it a technological dimension. How has that influenced your career?

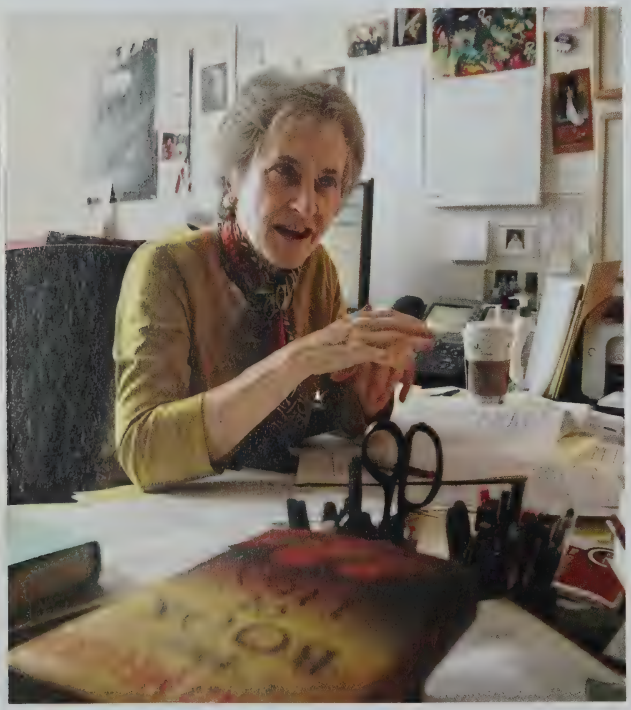
Tricia Wilson Nguyen: Certainly having a PhD from a hardcore engineering discipline has given me a level of credibility when discussing textiles and embroidery — something that has been debased and relegated to "women's work" in the last 200 years. I try never to apologize for my feminine side. As a young woman, I made it in some of the toughest male-dominated situations: MIT, a PhD program, and leading a grueling military development program. I have my war wounds, and know how to turn someone who makes a snarky comment into an enthusiastic listener by adding just the right amount of serious tech talk. And often the men take my expertise in handwork more seriously than the women.

Photos (left) by Genie Posnett; (above) courtesy Tricia Wilson Nguyen; (page 35) by Ted Curtin.

Jill Kneerim

director and co-founder of Kneerim & Williams at Fish & Richardson

Jill Kneerim is a founding partner, along with John Taylor "Ike" Williams, and a director of the literary agency Kneerim & Williams at Fish & Richardson. The agency is based in Boston and has offices in Washington and New York. One of the most prestigious in publishing, Kneerim & Williams' authors include former poet laureate Robert Pinsky, best-selling novelists Brad Meltzer and Sue Miller, and scholars Stephen J. Greenblatt, Caroline Elkins, Joseph Ellis, Dr. Susan Love, and Ned Hallowell. This year, the agency celebrates its 20th anniversary.



Deborah Weisgall: When you began, New York was the center of the publishing industry. Though Boston had two illustrious publishers, Houghton Mifflin and Little, Brown, pretty much every literary agent was in New York.

Jill Kneerim: When we first began, a lot of the writers said to us, Isn't it a disadvantage for you to be in Boston, since New York is the hub of the publishing industry? I answered that an agent is only as good as her clients, and, if you're good, everybody will pay attention. Now that question never arises. And communication has become much easier as well.

Deborah Weisgall: How much is Kneerim & Williams an outgrowth of the Boston intellectual community?

Jill Kneerim: The Boston area has the greatest concentration of colleges and universities of any city in the world, so it's a natural that we start looking for writers in our own backyard. One of our specialties — taking academics into public life — grows out of my longstanding interest in making accessible the work of people who do not normally write for a broad audience. First of all, I look for people who write well. Many academics haven't written for the general reader and sometimes could use advice about how to cast their ideas to make them appealing to that audience. I find that there are many people who are ready to try that, especially those who are mid-career and older, who already have tenure. It's a daring young scholar who can afford to try that kind of writing. People in the academic world have exciting ideas, and when they are good writers, it's a marvelous trip to be on with them. What's at the core of speaking to a wider public is knowing how to tell a story.

Because I'm in Boston, I tend to have a lot of clients in the academic world. Deborah Grosvenor, who heads up our Washington office, has a list skewed towards people from the national press corps. She has more journalists than I do, and they're writing policy books. We both do history, but I'm more likely to have an academic historian, while she has a journalist. I also think that being in Boston gives me an advantage because New York is so dominant in the book-writing business that it's easy to forget that there's any other place — and that people can look at the world differently from the way they do in New York.

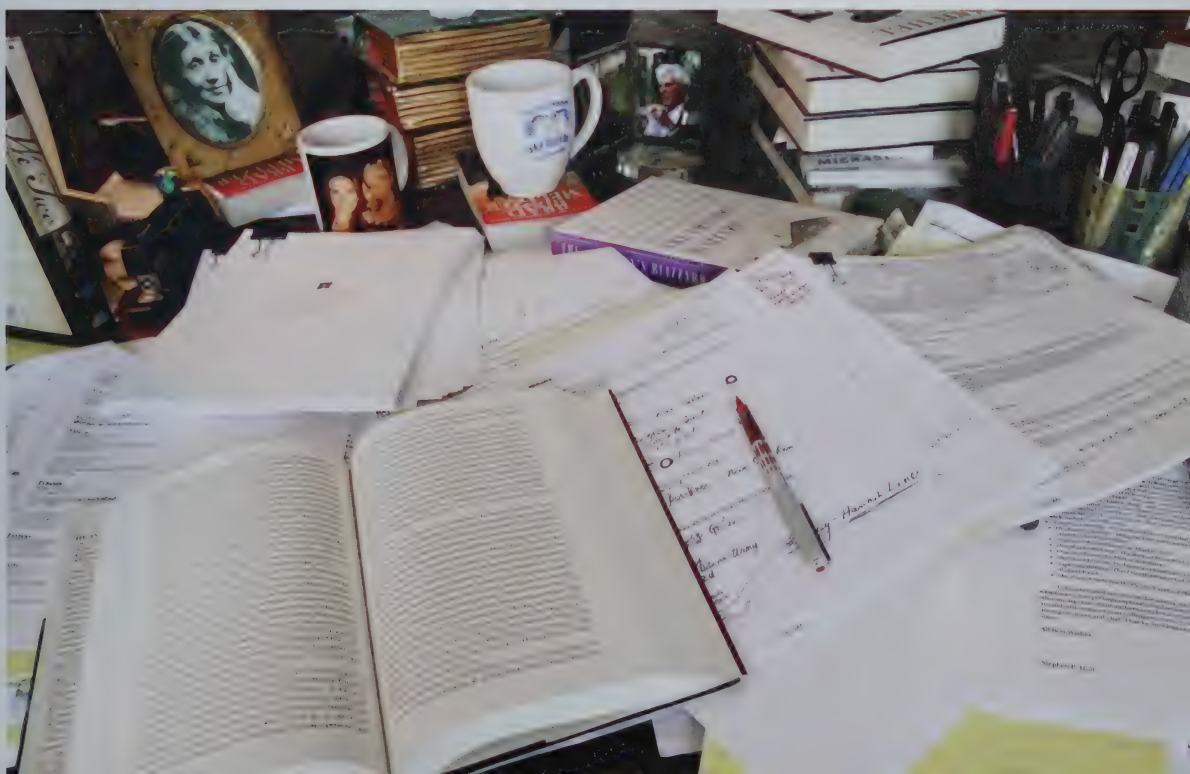
Photos by Alex Budnitz.

Deborah Weisgall: How do you reconcile art and commerce?

Jill Kneerim: All art bridges art and commerce, unless you're living alone in a cave. There are so many ways these days in which artists and writers have to think about filthy commerce. We should stop resisting and learn that it's part of the game. And there's a lot of fun in getting every kind of client out into the book world. With a journalist, I'll have more of a chance to debate what the subject is going to be. Academics already have their specialties. I have one author who's been working on his book for 10 years. First, he had to spend a couple of years mastering a complex foreign language in order to conduct interviews in that language. Now he has a body of material that nobody else in the world possesses. Caroline Elkins, who won the Pulitzer Prize for her book *Imperial Reckoning: The Untold Story of Britain's Gulag in Kenya*, spent seven years gathering evidence. What I do is find someone whose ideas spark interest that would fire up a reader like me, who's not a specialist. Some subjects are too narrow — size is important.

I'm on the commerce side, but I adore being part of the link between writers — who, frankly, have been my heroes all my life. There is no one more exciting or important than a writer. I love being mixed up with writers and making a difference.

All art bridges art and commerce, unless you're living alone in a cave. There are so many ways these days in which artists and writers have to think about filthy commerce. We should stop resisting and learn that it's part of the game.



Susan Williams

creative director of Swans Island Blankets

Swans Island Blankets is a company based in Northport, Maine that produces handwoven blankets from flocks of local sheep. All the dyeing and weaving is done in an old house, and sheep pastured on a small island off the coast supply thick wool for winter blankets. The designs — single colors, subtle color blocks, and stripes — rely for their effectiveness on the natural shades of the wool and on vegetable dyes. Susan Williams, one of the owners and the creative director, has built an international clientele for their products.



Deborah Weisgall: How have you combined old-fashioned technology with modern marketing?

Susan Williams: I wanted to apply the aesthetic of the product to the company as a whole. There is a great story behind the company — John and Carolyn Grace left law careers in Cambridge to pursue a more satisfying life weaving classic blankets on Swans Island. We've moved the operation to the mainland, closer to where we live. The core issue is to introduce the blankets to a broader market without wrecking their integrity. I've captured the story on our website and in our printed materials; it's no baloney when someone understands what "timeless beauty" means. Our aesthetic has substantially helped the company's growth, which is part of the reason why we receive so much media coverage — we operate on a minuscule marketing budget.

Deborah Weisgall: How do you set goals for growth?

Susan Williams: Our goals for growth are more or less driven by our financial and human resources. There's been some trial and error and postponing of great products — we produced some coats a couple of years ago that proved too labor-intensive and expensive. We quickly learned what we could accomplish while maintaining the highest standards, given the current scale of our business. We have four looms. Last March, when Michelle Obama wanted to give one of our throws to the prime minister of Ireland, we were lucky that we had a green one already on the loom.

We like to think of ourselves as the Slow Food of manufacturing, which probably sets us apart from other business models. We also offer a blanket hospital for cleaning and repairs. And this summer we introduced a line of yarns for hand-knitting, in colors that are consistent with our aesthetic.

Deborah Weisgall: How would you describe the satisfactions of the business?

Susan Williams: They come from knowing that I am contributing to making products that are genuinely exquisite, practical, and simple. Our customers come from all over the world; they are unimaginably varied.

Deborah Weisgall: What is Swans Island's impact on the community?

Susan Williams: Obviously, we employ people — and it fits into this place because there are a lot of interesting and talented people running small businesses here. There seems to be a deep understanding and desire for our standard of quality — not only locally, but globally.



Our aesthetic has substantially helped the company's growth, which is part of the reason why we receive so much media coverage — we operate on a minuscule marketing budget.



Photos (left and top right) by Sarah Szwajkos; (bottom right) Marti Stone; (page 35) courtesy Swans Island Blankets.

Peter MacDonald

lead artist for *Rock Band*, Harmonix Music Systems

Rock Band is one of the incredibly popular videogames [illegible] by Harmonix Music Systems, Inc. in Cambridge, Massachusetts (others include *Guitar Hero* and *Amplitude*). In *Rock Band*, you and your band play gigs in clubs across the country and around the world, move up from van to tour bus, from simple chords to whole songs, from Seattle to Shanghai, doing everything (musically, at least) that real rock bands do, including hitting the camera. Playing these games, you navigate intense, intricately detailed visual and acoustical worlds. Peter MacDonald's first job after college was as an architectural draftsman; after a year, he left that field to develop games.



Deborah Weisgall: Your industry has gone from cutting edge to mainstream in about 15 years. What was it like to invent games when you started out; how does it compare to what it's like now?

Peter MacDonald: A small cadre of game developers has been plugging away since the late '80s; I joined the industry in 1995, working for a startup. It took five or six years to publish our first game, and our team was a pretty scrappy, disorganized bunch. Everyone had a wide swath of responsibility and a lot of room for creativity because we were making up our own intellectual property as we went along. I was an environmental artist, applying some of what I'd picked up from architecture and a lot of what I'd picked up from fantasy novels to create a virtual 3D world. It was pretty fun, but in retrospect, we wasted a lot of time and didn't really know what we were doing. Most of us were right out of college. In 1995, you couldn't find experienced developers in Boston; there was a lot of talent coming out of the schools here, but not a lot of leadership. The whole company might be 20 or 30 people, mostly young, white, nerdy males.

Now the games I work on have budgets that are 10 times larger, and the teams and the company I work for are all 10 times larger. When I joined Harmonix four years ago, we had roughly 30 employees; now we have roughly 300. The game industry has matured; we have adopted standards and practices from other creative industries, and we strike a healthier work/life balance. We're making better games in a shorter amount of time and without as much stress. One downside, depending on how you look at it, is that an individual's creative bubble of ownership has gotten smaller. On my first game, as an inexperienced artist, I created a whole world, almost entirely at my own whim. A junior environment artist on my team now will be able to build a handful of interior spaces under very close supervision.

Deborah Weisgall: How important is the location of Harmonix? Do you benefit from the critical mass of musicians and artists and high-tech people here?

Peter MacDonald: Absolutely. Harmonix was founded by two MIT graduates. Our art director went to the Rhode Island School of Design. I went to UMass Amherst. Many of our artists went to MassArt or RISD. However, most of the game industry is on the West Coast. In Seattle, if you were to go into a Starbucks and announce that you were starting a game company, you could be handed the résumés of several experienced developers before you finished your latte. Here in Boston, you need to attract a mix of raw talent out of all the universities, plus experienced developers who are willing to move back here. It's kind of tough to find the people you need, but this is starting to change because companies like Harmonix are meeting with success and growing. I hope that young people in school in Boston will start looking locally before jumping on a plane to Seattle right away.

Deborah Weisgall: How do environments and characters grow?

Peter MacDonald: Harmonix's games are unique in that the character and environment design are not closely integrated with the core gameplay. They have a supporting role. As a result, the artists have pretty free rein. We collaborate in small groups: five or six character artists on a game, with one leader and somebody like me overseeing all art. In terms of process, it's pretty straightforward. We determine our needs, start drawing concepts, do group

Photo (above) by Elliot Clapp; *Rock Band 2* screenshots (pages 35 and 43) courtesy Harmonix Music Systems, Inc.

critiques, then more formal orthographic drawings to guide the 3D production. We hook up all the technology that will control the art assets, then it's tested and fixed. By the time the consumer sees the game, dozens of people have "touched" it.

Deborah Weisgall: Perhaps you can talk about the scale of your audience, their attention span, turn rate: the kinds of things you think about when you make games.

Peter MacDonald: The biggest games sell millions of copies every year; when you think about architecture on that scale, you're talking bridges, airports, and stadiums. Big stuff. I had a very small role on the design team for FedEx Field in Maryland. The stadium took perhaps 10 years from conception to opening day; *Rock Band* took one year. Then there's the lifespan; we hope that the *Rock Band* franchise will last for decades, but that's not typical in the games industry.

When we develop games, we spend a lot of time discussing the player experience. We use terms like "difficulty ramp," "play cycles," "hardcore," "casual," "stickiness," "story-driven," "achievement-driven," and whether something is "family-friendly" — or not. We try to identify a target audience, though if you are working in an established genre, the audience has already shown itself. We spend a great deal of time on the core musical interface and experience. Every little detail is debated. How fast do screen elements move? How saturated are the colors? How much information is too much? We basically operate on the knife-edge of human sensory cognition. That's how the game becomes challenging. If it moved any faster, or required the player to parse one more piece of information at the hardest levels, then it would become impossible and cross over from fun to frustrating.

Deborah Weisgall: How do you combine art and technology?

Peter MacDonald: The technology is our medium. Our products are experienced via a television screen and audio system, and interfaced by an instrument-shaped controller. That structure and the available technology define our limits. Technology is constantly changing, so we have to be adaptable; we are constantly learning. We try to exploit any new technology that might improve our game, but technology does not dictate our aesthetic goals. We might paint or draw characters that appear more detailed than we could achieve in the game for real, but it gives us a direction to aim for. The artists collaborate closely with the engineers who write our graphics software. We ask for the moon, and they work to give us the closest thing to the moon that the hardware can manage.

The technology is our medium, but technology does not dictate our aesthetic goals.





David Edwards
talks with
Jeff Stein AIA

With feet planted in the worlds of art and science, Harvard professor David Edwards is promoting new ways of catalyzing creativity and innovation.

CATALYTIC CONVERTER

< Cloud Place (The Cloud Foundation); Boston. Photo by Joel Veak.
v David Edwards (left) by Bruno Cogez. Jeff Stein AIA (right) by Liz Linder.



David A. Edwards is the Gordon McKay Professor of the Practice of Biomedical Engineering at Harvard University. In addition to his groundbreaking advances in the field of drug delivery and medical aerosols, he is the author of two novels, *Niche* (co-written with Jay Cantor) and *Whiff* (illustrated by manga artist Junko Murata), as well as *Artscience: Creativity in the Post-Google Generation*. He is the founder of Le Laboratoire in Paris (www.lelaboratoire.org), an innovative cultural center featuring collaborative art installations by artists and scientists, and with his wife Aurèlie Edwards, he is the co-founder of the Cloud Foundation in Boston, which promotes art and creativity among urban youth (www.cloudfoundation.org).

Jeff Stein AIA is head of the School of Architecture and dean of the Boston Architectural College and is the architecture critic for *Banker & Trader*.

Jeff Stein: In his book *The Structure of Scientific Revolutions*, Thomas Kuhn notes that great scientific advances are intuitive. It's only after the initial stroke of intuition — that "Aha!" moment in which scientists are really only guessing at something — that the left hemisphere of the brain kicks in and the experimentation, which is what most people think of as science, takes over. You've invented the term "artscience" to describe a kind of creative thinking. Are these concepts related?

David Edwards: Yes, absolutely, although Kuhn's work focuses on very recognizable "Eureka!" moments in the history of science. Artscience suggests that the process is less linear. Great innovations often come from two kinds of responses to a problem. One is the process of intuition and induction, which requires comfort with uncertainty and is often image-driven. The other frames the problem by simplifying it to a set of conditions that are identifiable and solvable — the scientific process of making a hypothesis, looking at the data, and drawing conclusions, which are often not what we expected and so require a new hypothesis. The artistic method and the scientific method fuse in key moments of innovation. The moments that are most memorable are the ones when we're standing in front of a blank page saying, "I don't really know what to do."

Jeff Stein: Your interests now seem to focus on the problem of that blank page and the idea that it often makes sense to cross the cultural divide between art and science and begin to fill in the blanks from the other perspective.

David Edwards: I increasingly look back at my childhood as a fount of information about everything I'm doing right now. If you look at how we learned as children, you realize that we were constantly moving from one environment, which we would get to know, to another, in which we had no clue. We went from crib to living room to school, constantly entering new environments and needing to throw away a lot of what was familiar in order to discover something new.

The hallmark of creative people is that they try to shock themselves. They try to go back to that state where they're throwing themselves into an unknown environment. I may be very familiar with the scientific environment, yet I find it

very catalytic to my creativity to immerse myself in the artistic environment. Then, once I get adapted, I run back to the scientific environment and shock myself, like jumping into cold water, and suddenly I'm much more sensitive to what it is to be a scientist, to what that lab means, to all these things that I just grow numb to after a while. So I run back and forth. I think creative people often tend to run across this conventional art/science divide.

Jeff Stein: You've even placed yourself in that kind of situation in your personal life, dividing your time between Paris and Boston.

David Edwards: That's absolutely true. It's easy to point to all of the challenges of our age, but one of the benefits of the world today is the ability to live simultaneously in two very different cultures; that is a kind of art/science divide for me.

Jeff Stein: You're also crossing divides in your professional life. You were trained as a chemical engineer and have taught at MIT and Penn State as well as Harvard. And now you are also jumping back and forth into the worlds of commerce and nonprofits.

David Edwards: The reality is that, from an early age, I was really never comfortable in an educational environment, even though I ended up being very educated. I was often very frustrated with school. That probably started at age eight when I wrote my first novel. My teacher took it home, and her son dropped an ice-cream cone on it. I constantly had the feeling that what mattered to me didn't really matter in my school. In the late '80s and early '90s, I moved to Israel for four years. I had this idea that I could just live another life, and ended up becoming a very theoretical scientist, really loving my work. And I wrote. I've always been interested in writing, but it was a very private kind of passion.

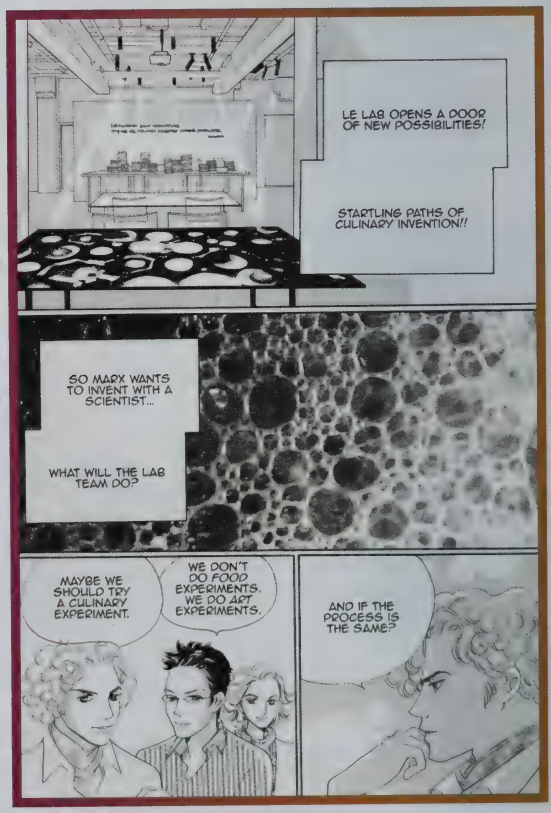
Jeff Stein: You kept a pretty low-profile until the late '90s when it seems that you had your own "Aha!" moment. What happened at that point?

David Edwards: Something very surprising happened to me: I published an article in the *Journal of Science* about delivering drugs, such as insulin, to the lungs in special kinds of aerosols, after which a venture capitalist approached me. He wanted to bet on my idea. I was at Penn State at the moment; I had left MIT a couple of years before that. I had no experience in industry and was both flattered and then frightened by the prospect that if I wanted to follow that opportunity, I would have to leave the scientific research environment that I had grown accustomed to, my comfort zone. We founded a company, Advanced Inhalation Research, which was sold within a year; the condition of sale was that I had to stay on for two years.

After that three-year period, I came back to Harvard to teach. I had left the university thinking I knew everything that I needed to know, and was coming back feeling as if I'd discovered everything that really mattered while I was away. I thought hard about how I could bring that experience to my students, this different way of learning.

One important element was that somebody had made a bet on an idea that I had, that someone believed in it enough to do that. And it pushed me, really pushed me to an edge, to take risks I never would have taken, just to prove my idea. So I started to teach a course where I encouraged kids to dream — I kind of bet on them.

This was during the Larry Summers years at Harvard — he was encouraging a lot of interdisciplinary dialogue on campus. I had started to write a novel more seriously, and my wife and I had started the Cloud Foundation to bring arts programs to urban kids. As I became more and more involved in the arts, I noticed that most of the university interdisciplinary dialogues were among the scientific disciplines; the humanities in general were not included. So I started a dialogue with a group of people, about 11 of us, from a music theorist to a composer to an architect to a medical doctor; people who, like me, rather than being driven away from this art/science divide at Harvard, were attracted to it for different reasons. All of us were very different, but we had similar experiences in that we were all celebrated by our institutions, but none of us had really been nourished by them. And we had all fled our institutions at key moments in our creative process. I suddenly understood why I had been doing so many different, weird things in my life, and what the writing had actually represented for me. The outcome of this reflection was a book, *Artscience*, and the idea of Le Laboratoire, an experimental center promoting artscience collaborations.





< This page: Le Laboratoire; Paris. Photo by Bruno Cogez. Left page: Manga art by Junko Murata; excerpted from *Whiff* © 2008 by David Edwards; published by Éditions Le Laboratoire (distributed in the US by Harvard University Press).

into phases: a starter or conception mode, a translation mode, where we're developing an idea, and a realization mode. We gravitate toward the environments that support those phases.

Jeff Stein: In other words, we are possessed of brain, voice, and hands, and we're working with one of them at a time, but all three of them together get us where we want to be.

Jeff Stein: So you became *homo faber*, he who makes, not just he who thinks. And as a result, your title is not professor of biomedical engineering, but rather professor of the practice of biomedical engineering.

David Edwards: It's ironic, because, 15 years ago, I was a very theoretical scientist. I have since learned that discovery is an active process. It's an active confrontation with a mysterious, evolving, unimaginable world.

Jeff Stein: There has been a lot of talk lately about the sorts of people and the kinds of activities that make up the Creative Economy — which at some basic level is about this process of discovery and the translation of ideas to some useful purpose: products, jobs, positive change.

David Edwards: We're seeing an incredible rediscovery of the power of human creativity, and the possibility to transform our world in potentially beneficial ways. The challenge is how to integrate that into institutions, particularly into educational institutions. How do we teach that? The Creative Economy is a huge reality here in Boston, one that doesn't exist in such a dynamic way in many other places in the world. Our challenge, right now, is how to grow that.

Jeff Stein: As you've thought about the creative process, have you found any commonalities that suggest that there is a teachable formula? Is there, for example, an identifiable moment when you switch brain hemispheres or when the artistic trumps the scientific?

David Edwards: I'm really skeptical of the "how to" approach to being creative; all the really creative people I know have never followed that sort of path and probably would not even want to analyze their creativity. But here's one observation: I think that creative people are very sensitive to their dependence on environment, both the human, or architectural, environment and the intellectual, or creative, environment. So they tend to put themselves in stimulating environments. Creativity seems to fall

David Edwards: Yes — that's an interesting way to put it. One problem in our understanding of creativity is that our social and cultural institutions are mostly designed to measure and encourage manifestations of ideas, which often substitute for creativity itself. When a book is published, or a product is manufactured, or a symphony is performed, the key moments of the creative process are invisible. In the course of a creative endeavor, you're going to make lots of mistakes. But creators don't see them as such — they're producing prototypes, so of course there are mistakes; you learn through multiple iterations. That may go on for days, weeks, months, even longer. But that's when everything's happening; those are the key moments. So I think for the creative process to be really alive and active, as it is in a healthy childhood, we need to be frequently thrown into that mode where everything is evolving, where we don't know where to go next.

Jeff Stein: And that mode is often found in an artistic environment. So, the creative mind can be developed through exposure to the arts, and yet the arts aren't as valued politically here as in France, where you spend the other half of your life. Can we change that?

David Edwards: There is a need today to demonstrate the value of the arts in America, beyond the ability to sell a work of art to a major museum. The arts are hugely relevant to culture, to humanitarian engagement, and to industry, and there's a need to integrate the arts into all that we do. The Cloud Foundation is an effort to advance that idea by working with the Boston public schools. My wife and I did not grow up with money. Selling the company was very exciting, of course, but it was also disorienting — not in a negative way, but just in trying to understand it. We made a decision right away that we wanted to give away at least half of what we made, and we wanted not to just write checks but to be actively challenged by the process. So we created the Cloud Foundation, which has since worked with thousands of kids through its headquarters at Cloud Place on Boylston Street in Boston.

The Foundation has recently entered into an exciting new

phase with the recent launch of our first ArtScience Innovation Prize competition for Boston public high school students. Its purpose is to help them develop the tools for cross-disciplinary learning and creative thinking. We provide them with up to 100 breakthrough ideas, very "blue sky" art and design ideas at the cutting edge of science. They then work with mentors — scientists, artists, and entrepreneurs — and participate in workshops at Cloud Place and the Idea Translation Lab at Harvard to help them think about how to translate these ideas into project concepts, which could be new products, for-profit companies, museum exhibitions, nonprofit organizations, anything. Teams will present their ideas to a panel of judges this fall, and the winning team will receive $100,000 and a trip to Paris to continue its work at Le Laboratoire. The goal here is to bet on kids, to get them to learn early on that their passionate commitment to ideas that cross boundaries can be transformative.

Jeff Stein: Besides the Innovation Prize, what goes on at the Cloud Foundation on a daily basis?

David Edwards: We talk to 10,000 kids a year but work principally with the hundreds of kids who come in for after-school art workshops and programs. We sponsor exhibitions and events and work in partnerships with other organizations in the city. In general, Cloud Place is a kid place where kids are the curators. Working with kids means dealing with problems of kids, so there are lots of sit-down conversations and moments with kids from struggling neighborhoods in Mattapan and Lynn in which you sometimes hear things that are very powerful and sometimes difficult or hurtful. The Cloud is a window into the life of our young generation.

Jeff Stein: You have a sister organization, Le Laboratoire, in Paris, which is more for adults and sponsors projects between artists and scientists.

David Edwards: The Lab, as I call it, is a cultural institution in the center of Paris that is closely partnered with Cloud, Harvard University and, increasingly, Trinity College in Dublin. It includes exhibition space and a design prototype store, where you can buy things that you can't buy elsewhere. As prototypes, they may not work perfectly. There's also a food lab, a wild place where we're producing food innovations with the renowned chef Thierry Marx, who we think of as a kind of culinary artist. Our challenge is to invite the public into art as process, as opposed to art as outcome, which is the fundamental distinction of a cultural lab versus a cultural museum. We do a few experiments each year with major artists and scientists. The idea is to create a new kind of translational lab, in this case a cultural lab, which is creating value that we can measure. We're doing an experiment at the Louvre right now. I'm hopeful that the Lab will invite major investment from both government and venture capitalists.





Jeff Stein: Your new novel *Whiff* is a fictional account of an actual process that led to a new product from the Lab just last spring.

David Edwards: Yes. The product is Le Whif, an aerosol inhaler that delivers the taste of chocolate, without actually eating the chocolate. Zero calories. The novel was written with the idea of engaging the public in the drama of the creative process, which is hard to convey in an exhibition space. The food lab led to thinking about art and food and science, which led to the idea that maybe you could inhale food — I do know a lot about aerosols. I gave the idea to some students and they inhaled substances like mint and pepper — although the pepper was a disaster. At the end of the semester they said, "This is really cool, but we can't stop coughing." So we figured out how to get around that, and then included a Nespresso Whiff Bar in a culinary art exhibition at the Lab. It made a lot of news — people were enchanted by the idea even though many coughed. So we improved the design and now finally have a commercial product. We planned to sell it in our LaboShop and at Colette, a high-end store in Paris, and on the Internet. But then a young, former student, who is a brilliant entrepreneur, decided to start a viral campaign. That was a Friday in early April. By Saturday, our Internet traffic had doubled. Two weeks later, we were being asked for interviews on *Oprah* and *Good Morning America* and weeks later we'd received inquiries from distributors in 40 countries around the world.

Jeff Stein: You're describing creativity as a constant state of metamorphosis.

David Edwards: Or to turn that thought around, it is at the frontier of knowledge where we all become artists. Metamorphosis is confusing, chaotic; a scientist at a frontier of knowledge is not sure of anything. Take Judah Folkman, a man I really admired, a pioneer in the field of angiogenesis in cancer research, which focuses on blood supply to tumors. For years and years, he stood at a frontier with no proof that this frontier was really what he thought it was.

Jeff Stein: With your novels and products and teaching and the Cloud Foundation and the Lab in Paris, you're really kind of a bridge builder. The Japanese have a term for this: *hashi*. It means the end of one thing and the beginning of another. And that can be a bridge. It could be chopsticks, which is the end of food on the plate and the beginning of food in your mouth.

David Edwards: I love that concept; it's another way of thinking about metamorphosis. Our civilization is undergoing a metamorphosis right now, and at the same time I think that we all feel pulled toward this frontier of knowledge. It's a very chaotic, confusing era. But this is precisely the time in which the arts have a major role to play in every sector of society. The arts can teach us how to embrace the chaos and turn it into a moment of enormous creativity. ■





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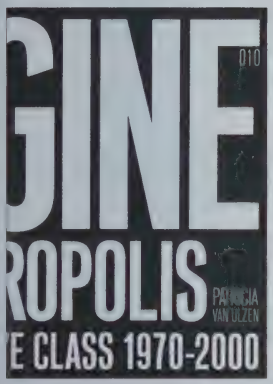
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IMAGINE A METROPOLIS: ROTTERDAM'S CREATIVE CLASS 1970–2000
By Patricia Van Ulzen
010 Publishers, 2007

***Imagine a Metropolis* is a gossipy book** about the role of Rotterdam's artists, planners, and impresarios in the economic and physical development of the city since 1970. Although the book delves too deeply into insider stories to appeal to most readers, this detailed account of the cultural history of Rotterdam has important lessons for capitalizing on our own post-industrial past.

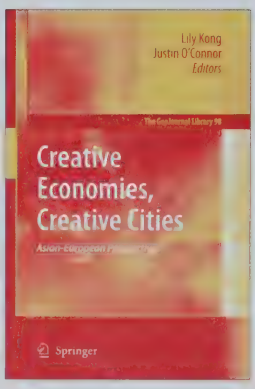
Since the 1920s, artists, architects, and cultural commentators have created a robust representation of Rotterdam as the modern doppelganger to the historical capital city of Amsterdam. In the 19th century, Rotterdam's port eclipsed Amsterdam in size and importance and, in the 20th century, it emerged as the largest in Europe. Port functions and associated industries that sprang up along the River Maas injected the city and environs with a character that was mythologized by 20th-century photographers and writers. In addition, the Rotterdam school of architecture, as exemplified by the Van Nell factory and architects like Mart Stam and J.J.P. Oud, was contrasted with the contextual brick architecture of the contemporary Amsterdam School.

The bombing of Rotterdam in World War II by both the Allies and Germans (reflecting the strategic importance of the port) meant that most of the city was rebuilt in a postwar Modernist style, thus fulfilling prewar Rotterdam's image of itself as a modern metropolis. In the early 1960s, the auto-dominant planning that characterized postwar Rotterdam was criticized by an emerging cultural elite that initiated several projects to reintroduce a pedestrian scale and natural landscape elements to the central city. But by the late 1970s, the edginess of Modernist Rotterdam was re-embraced by independent filmmakers and proponents of New Wave music who found the gritty industrial landscape the perfect backdrop to their aesthetic.

Ironically, the port authority became the biggest champion of the underground creative class by giving a group of architects and artists a former waterworks facility for use as studio and performance spaces in the late 1970s. Called Utopia, this same group implemented Ponton 010, a floating theater and bar that seated 1,100 people. Ships and cranes served as the moving backdrop for concerts and other kinds of performances. As a result, the port landscape became the galvanizing spectacle of modern Rotterdam.

While Boston is more similar to Amsterdam, there are useful comparisons between Boston and Rotterdam including the role of the underground music and arts scene in the 1970s. Like Rotterdam, Boston is also exploring strategies that reconcile the working waterfront with a revitalized urban culture and needs to consider initiatives that better coordinate official cultural policy with a vital and entrepreneurial underground culture. Van Ulzen makes a convincing case that representations of a city, even if they are amped up to the level of a stereotype, can become self-fulfilling.

Tim Love AIA, LEED AP is a principal of Utile, Inc. in Boston and an associate professor of architecture at Northeastern University.



CREATIVE ECONOMIES, CREATIVE CITIES: ASIAN-EUROPEAN PERSPECTIVES
Lily Kong, Justin O'Connor, eds.
Springer, 2009

Why are signs of urban regeneration so unevenly distributed? Some cities — Boston, for example — have reinvented themselves, while others — such as Detroit — have not. Readers of Jane Jacobs may have suspected the cause, but we needed economist Richard Florida's seminal 2002 work *The Rise of the Creative Class* to validate it. Florida's research shows that cities that host creative individuals and enterprises do better than those that don't. It's only a short beat from there to the thesis that cities can improve their economies by making themselves hospitable to creative industries. Seven years later, Florida has become the rock star of urban resurgence, and there is nary a beleaguered city in America that does not aspire to a creative economy.

Creative Economies, Creative Cities, an edited collection of articles by academics from Europe, the Far East and Australia, puts Florida's thesis in global and historical context. The book mines a rich vein of debate that began long before 2002 about the effectiveness of the Creative Economy idea. It seems that Florida is less an innovator than a synthesizer and popularizer whose genius, like Henry Ford's, is to integrate advances by others

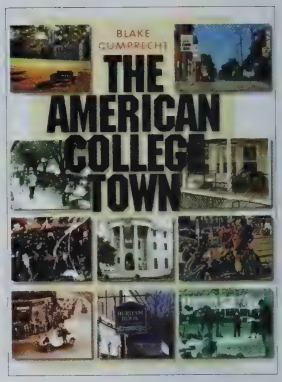
and put them into production.

The book is a kind of echo chamber for academics and policy-makers, with authors citing each other's works and taking positions on sometimes narrow questions of economic and cultural policy. The authors worry about how to define creativity, whether it resides in the individual or in the collective enterprise, how to measure its economic impact, the effectiveness of creative clusters, how exportable creative policy is, and how to avoid homogenization and gentrification. Defining creativity broadly to encompass technological innovation encompasses videogame developers, the focus of an article that addresses why all Asian cultures except Japan are imitators rather than innovators.

Most of these pieces originate in social democracies in northern Europe or the more authoritarian national cultures of China and Singapore, where government has a big footprint and there is less debate about whose culture is being promoted. So why has the Creative Economy thesis become so popular here in the US, where we tend to rely on private philanthropy rather than government to enrich domestic life? Perhaps because it provides a pragmatic rationale for public support for cities and for the arts which overcomes the culture wars about elitism.

But the book's many competing voices suggest that these policies may prove trickier to implement than they appear. Once you frame the goal as economic development, cultural excellence becomes secondary. And it's hard to engineer serendipity anyway, so maybe all you can do is to create the circumstances that allow it to arise and hope for the best.

Matthew J. Kiefer is a land-use attorney at Goulston & Storrs in Boston. He teaches in the urban planning program at Harvard Graduate School of Design.



THE AMERICAN COLLEGE TOWN
By Blake Gumprecht
University of Massachusetts Press, 2008

Blake Gumprecht is passionate about college towns. He has spent most of his adult life in them and has written a lively and engaging book that should be required reading for the many architects and planners in Greater Boston charged

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A professor of geography at the University of New Hampshire, Gumprecht begins with an excellent history of the college town and why it is a uniquely American phenomenon. He focuses a keen geographer's eye on the subject and has definitely done his legwork, traveling to dozens of places and interviewing a full range of students, faculty, administrators, politicians, and townies. He provides exhaustive — sometimes too exhaustive — details about the demographics and makeup of college towns, and how to distinguish one from a place that merely has higher education in its midst. But it's sometimes difficult to understand why he lavishes attention on certain places at the expense of others — we hear far too much about Ithaca, New York and the Kansas towns of Lawrence and Manhattan, for example. Oddly, for a man who teaches in New England, our region is strangely underrepresented in the book, as is the South. Geographic diversity, anyone?

Gumprecht and his fellow college-town habitués seem at times a little too satisfied with themselves: "Youthful and eclectic, unusually cosmopolitan for towns of their size, with more bookstores and bars per capita than other cities, the business districts of college towns display a free-spirited distinctiveness…"

But having provided this overly gushing description early on, he redeems himself later by pointing out how college-town residents seem to personify our national culture of contradiction. They see themselves as bastions of tolerance, eccentricity, and freedom, but don't want rowdy student neighbors; they claim to be for the underdog, but don't want any housing development that might attract new residents or erode their own property values. He takes to task the left-leaning residents of a major California college town as follows: "There is ample evidence to suggest that support for liberal causes in Davis has been unreliable, selective and motivated more by selfishness than concern for the greater public good." Go Gumprecht!

The author ends on a positive note — not only are college towns not going anywhere, but they also stand to be the winners in the ongoing national competition for the "knowledge economy." But college towns are like "artsy" neighborhoods — once they become a bit too smug and affluent, they lose the funky authenticity that made them special to begin with. It is this funkiness that Gumprecht celebrates, and he's not afraid to point out that, sometimes, the enemies of local college-town character are the very ones who claim to be its champions.

James McCown is a Somerville, Massachusetts-based writer specializing in architecture and design.





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THE CREATIVE ECONOMY
www.creativeeconomy.org
The New England Foundation for the Arts is a longtime advocate for the Creative Economy in this region. Serious work here, including white papers and reports — and great resources.

HIRE CULTURE
www.hireculture.org
The free job search engine sponsored by the Massachusetts Cultural Council. And yes, there are postings!

THE CREATIVE CLASS
www.creativeclass.com
Download a photo of Richard Florida and hear the latest about the creative class direct from the guru himself.

CREATE EQUITY BLOG
http://createquity.blogspot.com
A blog exploring "the link between art and business in a creative society," with posts that take on the Richard Florida juggernaut and links to an amazing array of creative people, places, and organizations.

INNOVATION PHILADELPHIA
www.innovationphiladelphia.com
This impressive economic development organization extends Philadelphia's Brotherly Love across 11 counties and three states, with the goal of attracting a young, innovative workforce and making Greater Philadelphia a world-class destination for creative businesses.

ARTSCAPE
www.torontoartscape.on.ca
A nonprofit that "revitalizes buildings, neighborhoods, and cities through the arts." What happens when artists, community activists, and environmentalists are part of the redevelopment team? A model worth examining.

DAN PINK BLOG
www.danpink.com
Career advice from Charles and Ray Eames! Emotionally intelligent signs! Right-brainers will soon rule the world! OK, maybe not. But maybe!

MASS MOCA
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v Photo by Eric Levin; concept by Rob Smith.



My six-year old neighbor most accurately describes what's different about living in an artists building. He says, "All the grown-ups will play with you."

Our particular building, Midway Studios, is discipline-diverse. The live/work lofts house artists of all kinds: painters, sculptors, writers, photographers, poets, filmmakers, actors, dancers, and musicians; several collaborations (and my current employment) have started with conversations in the elevator. To rent here, you must be certified as a Boston artist through an anonymous review process administered by the Boston Redevelopment Authority. This helps ensure the caliber of work produced — we are home to two Guggenheim award-winners and several published authors. Apart from peer pressure, this is an incentive to make serious work, since certifications are periodically renewed and required for housing. Cease to meet the standards and you must move out.

Loft living is not ideal for all artists. It is expensive, and the changing development landscape makes our future uncertain. Some people leave because they can't get their kids into local schools; some simply yearn for green space. We have few conventional features here and have forged a kind of artificial environment to create a more balanced reality.

When there is a snowstorm, Fort Point is quiet and unplowed — perfect conditions for cross-country skiing. Phones ring and text messages go out with invitations to venture outside. Making our way across parking lots and along the Harbor, we discuss city politics, our families, national news. We talk about the changing neighborhood, bet on which developments will actually get finished, reminisce about the old days over hot chocolate.

Mostly we extend invitations for shorter trips — to the hardware store, to do laundry, to have a glass of wine. Summer brings other invitations, for activities that might seem more at home in a traditional New England town. We have a neighborhood softball league and hold potluck barbecues on rooftops. We sometimes paddle through the locks and up the Charles River in kayaks kept in parking garages. A movie series is screened outdoors onto sheets in our tiny park; the previews are often our own short films, and some of the most popular features are Hollywood films we have written or acted in or movies that have been shot in Fort Point (*Adaptation*, *Gone Baby Gone*, *The Departed*).

We compensate for living and working in one room by treating the neighborhood geography like a large house. Landmarks are referred to as if they were rooms. A group of us meet for coffee most mornings in "the kitchen," a spot on the banks of the Channel. We talk about recent openings, share recipes and advice. We play nicely, although envy or longstanding grudges about being passed over for a show are occasionally revealed over scones. Our "great room" is a local bar with '70s paneling, a piano and TV, and — always — familiar faces. We sometimes buy milk there, or even the occasional tomato or piece of fruit, from sympathetic staff who understand the cold cruelty of a long late-night walk to the 7-Eleven on the Harbor. Barter is official currency in Fort Point, and we extensively trade services and artwork in exchange for food or equipment.

Some of us are here because we don't fit anywhere else. The eccentricities of our work life — "days" that begin at 7PM, the tendency to go out in public in torn, paint-stained clothes — aren't well tolerated by most people. Some of us are here because we've been kicked out of studio space, marriages, or countries. If you are broken, Fort Point is a good place to get put back together.

It's like living in a village full of extended family. We're related by art. Generations are marked by the date you settle here, lineage determined by your standing in the art world. Like most families, our clan is strange (but reliable), and occasionally susceptible to squabbles and cliques. But you always have a place at the table if you want to come down for dinner. ■

Sylvie Agudelo is an artist and new business director at Stoltze Design. She has lived or worked in Fort Point for 19 years.



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Cover: Partial map of the Internet based on January 15, 2005 data. Lines are drawn between nodes representing IP addresses; their length indicates the relative delay between nodes. Map by Matt Britt, Wikimedia Commons, Cc-by-2.5. This page: Cell phone "tree tower." Photo © 2009 CellularPCS.com. Used with permission.

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Wasted

It has to rank up there with one of the great political aphorisms of all time. So good, in fact, that you wonder if it was lifted from *The Art of War* or *The Prince*: "A crisis is a terrible thing to waste." (In fact, it was lifted from Stanford economist Paul Romer.)

The prospect of economic collapse focuses the collective mind wonderfully. But by now, it is abundantly clear to many Americans that a great opportunity has in fact been wasted. If the Washington mandarins are correct and we have turned the corner on this recession, then the country's willingness to align behind a coherent vision is probably already dissipating. And if the mandarins are wrong — if unemployment figures are trapped by their own inertia, if we see the dreaded "double-dip" recovery — then the government's earlier failure to exert leadership will yield only greater, more corrosive skepticism. Leadership is not something you get around to.

And what is this missed opportunity? By now, we could have had a national infrastructure policy.

Maybe infrastructure doesn't sound terribly compelling compared to other national policies we could have had by now. But the healthcare thing hasn't turned out so well, and education is a famous morass. Infrastructure, however, evokes images of a nation pulling together, a nation on the brink of greatness, a nation at work. The Hoover Dam, the Tennessee Valley Authority, the Saarinen TWA terminal at Kennedy Airport, even the interstate highway system — fashionable as it is to malign it today — were all symbols of pride and all contributed to the greater prosperity as well as to a greater optimism. Another Chicagoan said, "Make no little plans. They have no magic to stir men's blood." Daniel Burnham would know that paving projects don't count.

But the romance of infrastructure is merely political lubrication. The real significance of infrastructure lies in its essential purpose: to support commerce and the public welfare. We are a country that has been ranked 15th in the world in broadband penetration. We are a region that imports almost all of its energy. We are a state in which six municipalities recently invoked boil orders due to contaminated water supplies. Our welfare is in jeopardy, our entrepreneurs constrained by systems that make them less competitive in the global market.

A coherent national infrastructure policy would create immediate work for many, and ripple-effect opportunity for all. It would embrace sustainability, promote new communications technologies (increasing both access and adoption), mandate regional cooperation, and solve the maintenance conundrum so that new investment in infrastructure is truly an investment, and not a spending spree.

A national infrastructure policy would give context and direction to the FCC's call for a national broadband plan. It would coordinate regional alternative-energy efforts, avoiding the recent scenario in which the New England governors were surprised to learn that their Midwestern peers were planning to sell wind-generated power to Eastern states. It would sidestep the competitive "me, too" scramble for high-speed rail funds (278 applications from 40 states) in the interest of an actual high-speed plan. It would state that "shovel-ready" is a flawed criterion for assessing which projects get funding.

The real significance of infrastructure lies in its essential purpose: to support commerce and the public welfare.

The administration has indicated that at some level it knows this is what is needed; President Obama himself invoked the Burnham adage. Matt Bai, writing in *The New York Times*, referred to Obama as the "shuffle president," referring to the iPod shuffle feature to suggest leaping from crisis to crisis. This was unfair. We, all of us, live in a shuffle culture. It's time to settle down and focus.

—

She was one of the city's most fearless defenders. Joan Goody FAIA, principal of Goody Clancy and longtime chair of the Boston Civic Design Commission, passed away in September. Smart and savvy (not always the same thing), Joan cared deeply about the civic life of the city, and she also understood the role of Boston's architects in shaping a rich public realm. At the time of her death, she was a member of *ArchitectureBoston*'s editorial board. I shall miss her wisdom, insight, humor, and support. ■

Elizabeth S. Padjen FAIA
Editor



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In "Meet the Creatives" [Fall 2009], editor Elizabeth Padjen expressed succinctly the position that the Commonwealth of Massachusetts has embraced with regard to the Creative Economy: "... support of the arts is not indulgence; it is vital to fostering creative thinking and the innovation that fuels our economic system."

Massachusetts' revolutionary spirit has led to over 400 years of innovations across all sectors of the economy, and the driving force behind those innovations is creative thinkers. Governor Patrick has emphasized the growth of the creative industries as key to our innovation-economy efforts by appointing the first-ever Creative Economy Industry Director and signing the Creative Economy Council Bill. We have forged key collaborations with creative industries, including the launch of the Design Industry Group of Massachusetts (DIGMA), which connects the design community with policy-makers and leading industries.

Bridging the gap between our creative talent and business people, industrialists, technology experts, entrepreneurs, academicians, and the entire innovation ecosystem will help maintain Massachusetts' rightful place as one of the leading "ideas" economies of the world. It also helps ensure that the design talent that comes to Massachusetts for a world-class design education stays on to work in the design professions in the Commonwealth. This is why we're excited about DIGMA's upcoming "Design and Innovation" events as a way to expose many of our other industries to the innovation that can come from "design thinking." We hope these sessions will not only be the beginning of a sustained conversation about the importance of design to the growth of businesses across the spectrum, but will also eventually put more of our designers to work by growing jobs both within and outside the design industries.

Gregory Bialecki
Secretary of Housing and
Economic Development
Commonwealth of Massachusetts

The Creative Economy [Fall 2009] is a powerful catalyst for innovation in our science- and technology-based industries. This belief has guided our work at the Massachusetts Technology Collaborative's John Adams Innovation Institute in the context of seminal projects that have nurtured and strengthened our Creative Economy. These efforts have included a key conference organized by The Salem Partnership; assistance to the Berkshire Economic Development Corporation, leading to the establishment of Berkshire Creative; and involvement in an initiative by Massachusetts College of Art and Design that led to the founding of the Design Industry Group of Massachusetts (DIGMA).

In addition to appreciating their intrinsic value for the human condition, the expression of the spirit, and the building of the symbolic and material worlds around us, the Creative Economy industries and professions are fundamental to the vitality of the Massachusetts innovation economy. As Beate Becker comments [in "Industrial Strength"], David Edwards convincingly argues [in "Catalytic Converter"], and Peter MacDonald illustrates [in "Arts & Minds"], we know that when artistic creativity, design thinking, and science and engineering expertise come together, visions emerge of novel products with exceptional form and function. This is why opportunities and spaces for interaction among artists, designers, scientists, and engineers are so important. And this is why education in the arts, design, and the humanities starting in K-12 is as important as science, technology, engineering, and math.

Congratulations to *ArchitectureBoston* and to the individuals and organizations featured in the Creative Economy issue who work hard every day to transform the Creative Economy industries and professions from our best-kept secret into one of Massachusetts' most important assets in the global economy.

Carlos Martínez-Vela PhD
John Adams Innovation Institute
Massachusetts Technology Collaborative

Thank you for the article "The Creative Entrepreneur" [Fall 2009]. I appreciate your recognition of the often-overlooked importance of creative businesses. As a consultant to creative companies in the Boston area, I relish the validation that your article provides.

As creative professionals, we often work more nimbly, networking with other creatives to form business task teams, and then dismantling them when they are no longer needed. Our efficiency, innovativeness, and aesthetic impact are exceptionally valuable to communities. However, despite this, we still work primarily in silos and, as such, lack the social and political power that brings recognition and benefits.

I hope that this article will inspire others as it has inspired me to make a commitment to working more collectively with other creative entrepreneurs to assure that our voices are heard in unison.

Inge E. Milde
Inge Milde & Associates
Entrepreneurship faculty,
Tufts University

"The Creative Entrepreneur" by Christine Sullivan and Shelby Hypes [Fall 2009] provoked many thoughts as I reflected on my own journey as a sole proprietor.

Those who enter the Creative Economy do so for reasons beyond financial prosperity. Most have very little business knowledge or experience; with eyes firmly set on creative goals, they rarely understand the true risks involved. They have heard about "cash flow" but did not realize that it may mean long periods of time between earning and receiving their income. When new opportunities disappear with a downturn in the economy, they wonder what will happen next. In the present economic situation, many are experiencing the downside of the high risk = high reward equation.

The article illuminated common misconceptions, including the fact that sole proprietors are not counted in the state economic reports (perhaps 20 percent of

the workforce). Without this data, how can we understand the true state of the economy? How can we gauge the economic recovery without this knowledge?

What should the government do? Personally, I do not want to be "bailed out." I would prefer more creative solutions to keep struggling sole proprietors solvent, such as restructuring tax laws to use current revenues to estimate taxes, rather than past years' (higher) figures; simplifying the process of hiring employees for small businesses; and carefully studying the impact proposed mandates would have on small business (and job) growth.

Most importantly, as creative entrepreneurs, we need to collaborate to help each other thrive as business owners. In bad economies, new businesses often flourish: the newly unemployed often find the smallest opportunity may be enough to begin a new firm, like a forest regrowing after a wildfire. We need to be there to help them grow, through mentoring and knowledge-sharing.

Bill Whitlock AIA
Waltham, Massachusetts
Chair, BSA Small Practices Network

I was delighted to see your broad coverage of the Creative Economy in the Fall 2009 issue. As the president of Midcoast Magnet, a Creative Economy networking organization based in Camden, Maine [www.midcoastmagnet.com], I am very tuned in to the relationship of people and places. Camden is a short sail down the coast from Northport, home of Swans Island Blankets featured in Deborah Weisgall's "Arts & Minds" article.

With companies like Swans Island Blankets as an example, Maine is becoming a great place to do business. We have hardworking, creative people who can now compete on a global basis while choosing to live in one of the most picturesque environments on the planet. One of the challenges we have is in re-purposing the existing buildings that give Maine some of its character to meet the needs of a 21st-century place of business. At the same time, architects and builders in Maine are challenged with renovating our aging housing stock to meet the demands of environmentally-conscious consumers while protecting the historical architectural palette that helps to define the Maine brand.

In November, Camden will host the Juice 2.0 Creative Economy conference ["Building Maine's Innovation Networks," www.juiceconference.org], which will weave together the arts and culture, along with technology and entrepreneurship. With over 40 breakout sessions featuring the best of Maine businesses, we'll be developing creative networks and discussing issues related to quality of place and entrepreneurship. I invite your readers to join us!

Skip Bates
Midcoast Magnet
Camden, Maine

I just received the Fall 2009 issue of *ArchitectureBoston*. By what stroke of good luck someone put me on your mailing list, I will never know. But your publication is always an eye-opener. As an architect in both New York and Hartford, the view you present of Boston and Boston-area design is significant. In short: the quality of the design work is generally higher by a long shot than the design work in New York, and certainly in the Hartford-New Haven area. That says something good about Harvard, MIT, and the other Boston-based design schools.

Sidney Vaneyck Sisk
Hotel Design and Development
New York City and
West Hartford, Connecticut

We want to hear from you. Letters may be e-mailed to epadjen@architects.org or sent to *ArchitectureBoston*, 52 Broad Street, Boston, MA 02109. Letters may be edited for clarity and length, and must include your name, address, and daytime telephone number. Length should not exceed 300 words. Online: post comments at www.architectureboston.com.

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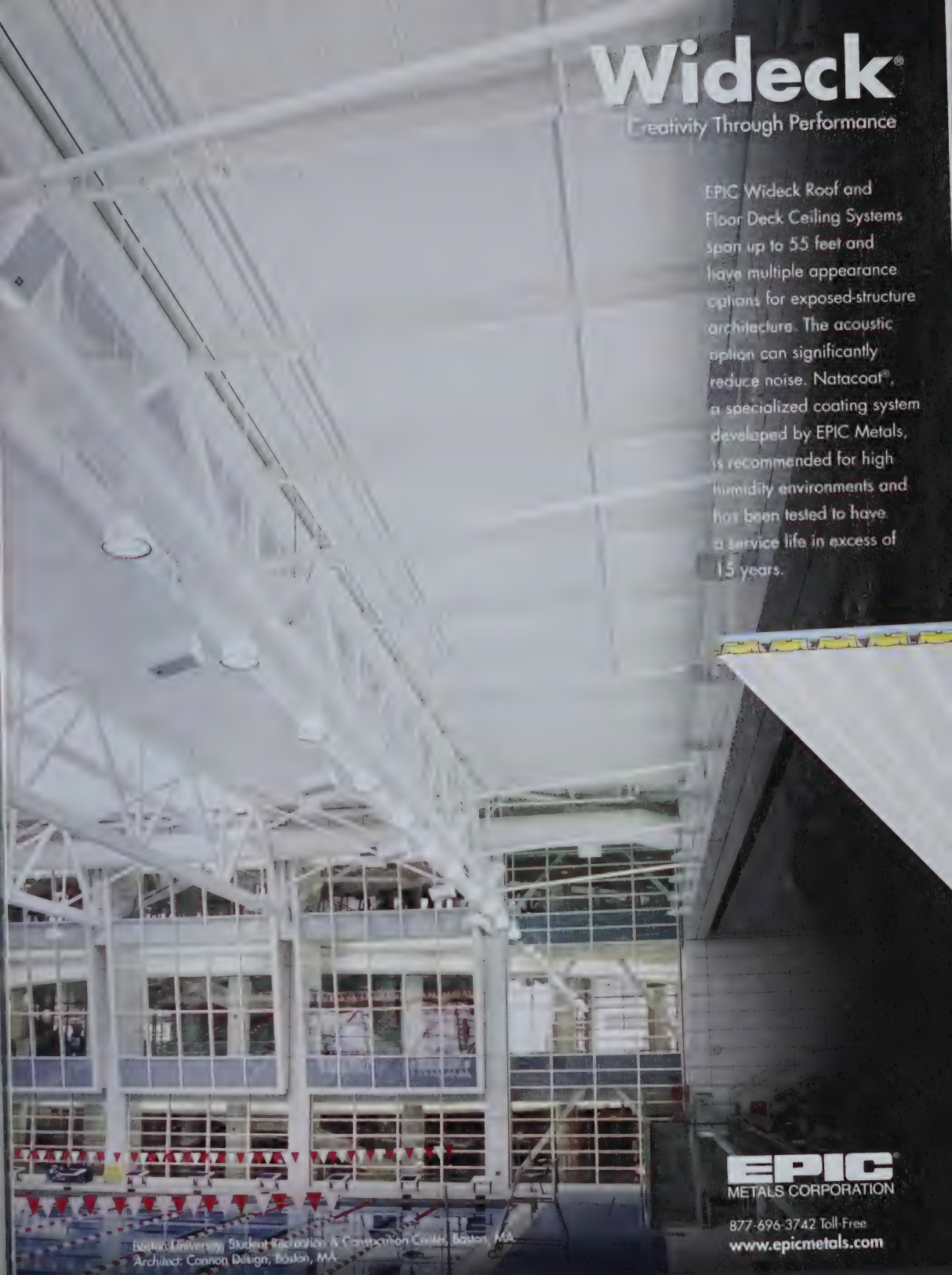
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The Gamble House, Pasadena, California, by Greene & Greene. Photo © Alexander Vertikoff. Courtesy, Museum of Fine Arts, Boston. Printed with permission of The Gamble House.

A New and Native Beauty: The Art and Craft of Greene & Greene

Museum of Fine Arts, Boston
July 15–October 18, 2009

The American Arts and Crafts movement once scorned as a nostalgic stepchild of European Romanticism, is now firmly enshrined in the architectural pantheon. Back in the 1960s, a friend rescued a signed Gustav Stickley table from a trash pile on a New York City street. That oak table would be a perfect companion piece to the furniture of California architects Greene & Greene recently on view at the Museum of Fine Arts.

Brothers Charles Sumner Greene and Henry Mather Greene designed 180 houses in the early 20th century, primarily in Pasadena. Their houses were *gesamtkunstwerks* in the manner of William Morris, H.H. Richardson, and Frank Lloyd Wright: the architects designed everything — the house, the landscape, all the furnishings, and anything else that complemented the cozy wood-joinery aesthetic.

Their masterpiece was the 1908 Gamble house (contemporary with Wright's famed Robie house in Chicago), and lamps, chairs, and stained glass from this and several other key Greene & Greene works were handsomely displayed at the MFA. It may be impossible to extrapolate architectural space into a museum setting, but the exhibition included instructive sketches, drawings, and floor plans that offered insight into the Greenes' design process. Unique to the show's Boston stopover were some of the same influential Japanese ceramics that the Greenes, as MIT architecture students, saw at the old MFA.

The most curious artifact is the citation from the American Institute of Architects, from which the show's *New and Native* title is taken. In 1952, decades after their pioneering work, the AIA patronizingly honored the Greenes for "emerging values in modern living in the western states," noting that they had made "the name of California synonymous with simpler, freer, and more abundant living." Some legacies are more enduring than others.

View online: www.gamblehouse.org/nnb.

William Morgan is an architectural historian and writer and the Provincetown Studies editor.

Ada Louise Huxtable Robert Campbell FAIA BSA Conversations on Architecture

Boston Public Library
July 2, 2009

They just don't make bully pulpits like they used to. The explosion of digital media has meant more choices and more voices — perhaps too many pulpits and certainly too many bullies — and a corresponding loss of authority.

What a pleasure, then, to listen to Ada Louise Huxtable, who took advantage of a singular moment in media history to create the profession of architectural criticism from one of the nation's bulliest of pulpits, *The New York Times*. As her interlocutor, *Boston Globe* architecture critic Robert Campbell FAIA, noted in this special BSA "Conversations" event. Huxtable started at the *Times* in 1963 — when the books *Silent Spring*, *The Death and Life of Great American Cities*, and *The Feminine Mystique* were launching their own revolutions. Her achievement was marked by a Pulitzer Prize in 1970 — the first awarded for criticism of any kind.

Today she is the architecture critic for *The Wall Street Journal* and author of a new anthology of essays, *On Architecture*. Her international authority remains unparalleled but was well matched in this lively discussion between two old friends, which left only one question: Will the blogosphere produce a new Huxtable?

Elizabeth Padjen FAIA is the editor of *ArchitectureBoston*.

Left: Ada Louise Huxtable by Bruce W. Stark. Right: Robert Campbell FAIA by Peter Vanderwarker.





Cities for Families: Designing Boston for Every Generation

Common Boston Weekend Forum
June 18, 2009

Eighteen extra hours with your children each week: that's what Boston offers urban families. Paired with the highest cultural-asset-to-child ratio of any city worldwide, it's a pretty persuasive argument for raising a family here.

These estimates, provided by Susan Silberberg-Smith of MIT and Lou Casagrande, past president of the Boston Children's Museum, could seed some great marketing and promote the concept of livable cities for families, the focus of Common Boston's 2009 forum.

Still, families choose to leave.

Living blissfully free of car and home maintenance with access to everything from museums to neighborhood baby-sitting swaps only works if you can easily reach them. Forum moderator Tom Keane, a Boston resident and the new executive director of the Boston Society of Architects, reported an hour-long morning ritual of driving his child to school.

Casagrande described Boston's cultural assets as an "archipelago": relatively isolated, connected only by congested and not particularly cyclist- or pedestrian-friendly streets, they don't quite live up to their potential.

Landscape architects brought a different sensibility to the discussion. Shauna Gillies-Smith of Ground sees the spaces between buildings as opportunities for the exchange of ideas — places that could be designed to foster the safety that comes with what Jane Jacobs famously called "eyes on the street." Jill Desimini of StoSS sees potential for grassroots planning, citing the bottom-up development of Amsterdam's playgrounds.

Madeleine Steczynski, executive director of the East Boston after-school music program Zumix, highlighted ways that cities present a diversity of role models for children to emulate, unlike her own suburban upbringing. Zumix is one example, introducing young people to the music industry with everything from a recording studio to a radio station.

Suburban aspirations have deep roots in American history and culture. But there's no doubt that a century of marketing acre-lot living has also shaped contemporary preferences, as demonstrated by often-amusing historical advertisements that Silberberg-Smith presented. If marketing has so influenced our current situation, perhaps it can help build a better future. We have a tradition of healthy urbanism to draw on as well.

Part of Common Boston's annual neighborhood festival, the forum encourages dialogue between Boston's neighborhoods and those who design for them. Tours, presentations, a design-build challenge, a neighborhood photography project, and Pecha Kucha rounded out the weekend. For more information, visit www.commonboston.org.

Conor MacDonald is a writer in Boston and was the Chinatown Common Point planner for Common Boston Weekend.



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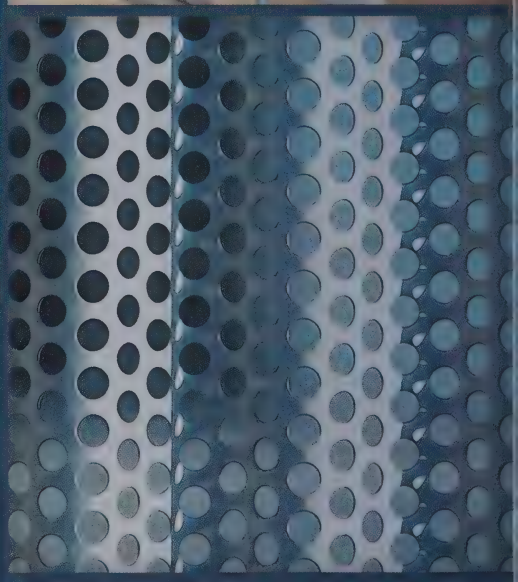
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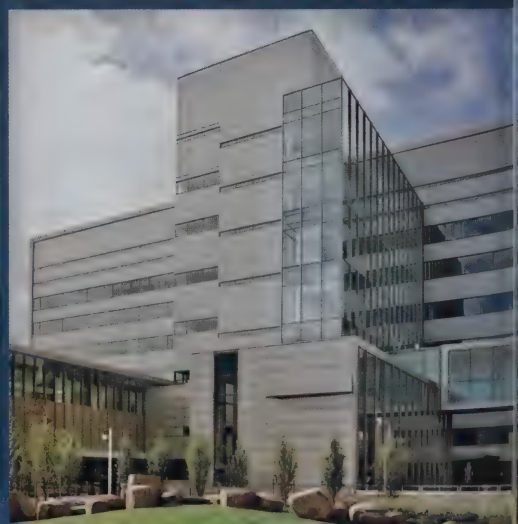
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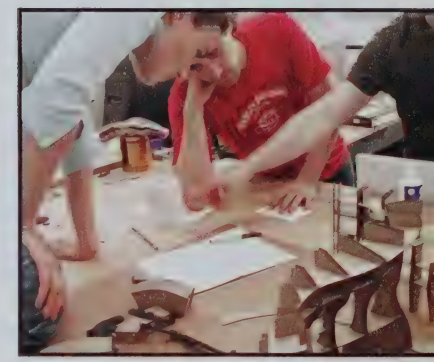




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Lending a Library



∧ Photo by Joan Wickersham.

The project: A collaboration between a team of students at the Harvard Graduate School of Design and several community groups to design and build a temporary storefront branch library in Boston's Chinatown. The neighborhood has been without a library since 1956, when the local branch was torn down to accommodate a proposed Central Artery route that was later changed.

The idea: Give the community a taste of the services and focal point a library would provide — and begin to create the desire, support, and momentum that could lead to a permanent branch library.

The workplace: A group of four desks on the otherwise mostly deserted top floor of the GSD. Already, at 10 o'clock on a summer morning, the place is sweltering; the days of heedless air conditioning are long gone. In the middle of the desks is a large chipboard model of one of the library's undulating shelving units. Next to it is a smaller model representing the entire space. All the design elements are modular, so they can be dismantled and reused when the installation closes.

10:05 Marrikka Trotter, the team leader, who recently earned a master's degree in design studies from Harvard, talks with student Matt Swaidan about generating a workflow chart to track the remaining fabrication and the installation of the project elements. She mentions she'll be away for a few days at the end of next month, returning on the 27th.

"My birthday," Matt says.

"You're getting old, man."

"Yeah, I've doubled my gray hairs this year."

"I've got some real streaks now. It was my thesis that did it."

10:10 Jungmin Nam, another student, arrives, and Marrikka draws him into the flow-chart discussion. The schedule is tight. As fall approaches, the team will lose access to the workspace and equipment in the GSD. People have out-of-town commitments. There's been a delay in obtaining construction materials — a promised early donation turned out to be smaller than expected, and finding another donor took time. Figuring out how to cut MDF, a kind of fiberboard, for stable shelving units has also been tricky.

10:20 Discussion of whether to try cutting Lumasite acrylic panels for display units with the drill bit they already have, or take time to order a bit specifically tested for this material. Jungmin asks Marrikka to explain the decision to use Lumasite. "I thought we were going with polypropylene."

"There were life-safety issues. If polypropylene ignites, the fumes can close off people's lungs in seconds. So we have to use Lumasite, which is safe." She smiles. "And much nicer."

10:40 Matt, who has carpentry experience, recommends they wait for the right equipment to cut the Lumasite. A slight delay is better than the risk of blowing a drill bit. He goes to order the piece, while Marrikka and Jungmin talk about lighting. She's concerned about the brightness of the overhead fluorescents. "We'll have to take out some bulbs."

"I like a bright library," he says.

"But this isn't going to be warm and glowy, it's going to be cold and glowy. Though it will help that everything else is in a warm palette."

10:47 Thinking ahead to the installation schedule, involving the design team as well as other student volunteers, Marrikka and Jungmin look at a computer rendering of the sinuous curving ceiling sculpture. She points. "For this piece, we'll need people who really know the design and what they're doing. But this" — pointing at another piece of the design — "just needs hands. Brute labor."

She asks him to get a sample of steel wire to suspend the sculpture from, so they can test it for strength. "Also, maybe you could make a model of the whole thing."

String, for the model? They decide on fishing line.

11:02 "Casters," Marrikka says. A GSD professor critiqued the design last week, and pointed out that the MDF shelving and seating units would be heavy; casters would prevent them from sinking into the carpet tile. Marrikka and Jungmin look at an online catalog, comparing mechanisms and bearing capacities of various casters.

11:17 They choose one, noting that it will raise the heights of seating units by 40

millimeters — a change that, to achieve ADA compliance, will require a comparable change in the height of the work surfaces.

11:20 Casters that lock versus casters that don't.

12:30 Marrikka explains the schedule to Shelby Doyle, a new member of the team, who has just stopped by. Shelby is tied up right now with research and the production of a student handbook, but she can put in more time at the beginning of next month.

"It would be especially good if you could help with upholstery," Marrikka says. She lowers her voice. "The boys are scared of fabric."

1:15 Downstairs, in the basement wood shop, Matt has spent the past hour on the computer, using a program called Rhino to lay out a new router cutting diagram for the MDF sheets, based on last week's prototypes. He's made minuscule adjustments to the cutting allowances for grooved tabs that will hold the shelves together — .020" was too jiggly and compromised the stability of the units, but .018" was too tight and would have made insertion almost impossible, especially given the propensity of the material to swell. As a carpenter, Matt was happy if he could achieve tolerances of 1/64", so working with these infinitesimal thousandths is new and fascinating to him, as is working with the computer-controlled CNC router. He transfers his Rhino diagram to the MasterCam program, which interfaces with the router.

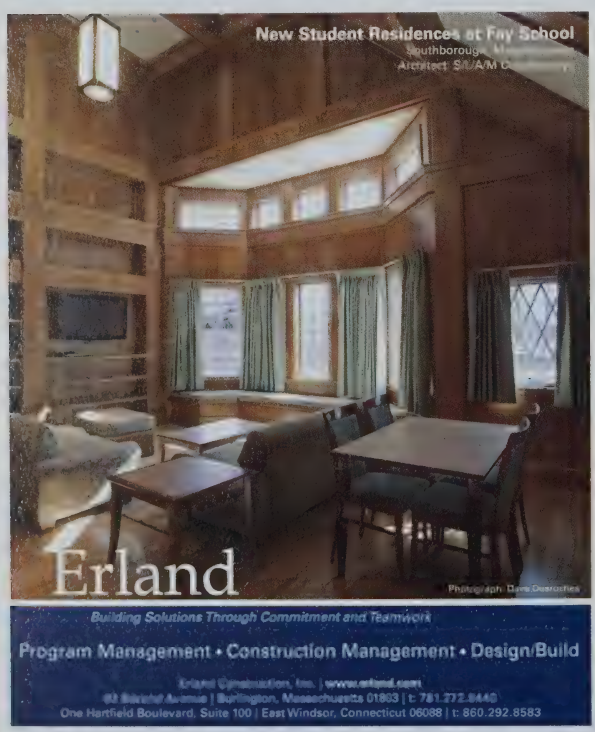
1:20 Matt turns on the router, programmed to channel out shelf grooves to accommodate the Lumasite panels. Behind the glass wall, the router begins to roar and wave its tentacles over the MDF sheet lying on the table.

1:27 The grooves are done. Matt changes the drill bit for a thicker one, and the router begins cutting the curved outlines of the shelving units.

1:49 Back upstairs, team member Trevor Patt is showing Marrikka a computer diagram for Inspectional Services, depicting the spatial relationships between the curved ceiling sculpture and the lighting fixtures. "I think that's just the right level of detail," she tells him.

2:18 A rep from the carpet company stops by. The students love a pearl-gray carpet tile with a subtly ridged texture; they'd lay it in a basket-weave pattern inspired by the pebble paving at the Chinese house at the Peabody Essex Museum. The carpet company is willing to give them a great deal, but the students still need to find a donor to cover the cost. The other option is to accept a carpet installer's offer to donate miscellaneous leftover tiles in assorted colors: free but ugly. Marrikka asks the rep about lead time for ordering. The answer: Five days. Marrikka: "So we don't have to decide this week. We can let it play out."

2:25 Shelby stops by again. She has 15 minutes — is there anything she can do? Yes: a handwritten thank-you note. Marrikka hands her an envelope and the address of a plastering company that has donated to the project.





2:39 Jungmin has talked to a wire company in Brockton. He's thinking of going there now to look at samples.

Marrikka explains that Brockton is pretty far away. "We'll figure out how to get you there another day. For now, I'd just start the mockup."

Jungmin says there is a certain wire he thinks would be best, but there's another one that might work too —

"We'll get all those samples when we get you to Brockton. But for now, let's do the mockup."

2:50 A student named Damon who has not been involved with the project is standing by Trevor's desk, intrigued by the diagram of the ceiling sculpture, which will be made of curved Lumasite panels suspended from wire. "Why wire?" Damon asks. "What if there was something more like a sheet-metal clip?"

"What what?" Marrikka asks, overhearing.

He sketches on a piece of paper.

"What about the weight of the clips?" she asks. "And how do you maintain the curve?"

3:12 After a discussion — Marrikka advocating for wire, and Trevor and Damon paring down and refining the clip idea — Trevor picks up an X-acto knife and cuts a quick paper model of the clip.

"Oh, that's beautiful," they all say.

Marrikka: "But why can't we do the same thing with wire?"

Trevor: "I just don't like wire."

Marrikka: "This is irrational. What has wire ever done to you?"

3:28 Discussion of how sharp the edges of the clips will be after they are waterjetted. Marrikka is concerned about the safety of the installers. "And we should figure out how much sheet metal we'll need. Is there a piece of metal downstairs we could use for testing?"

3:30 Marrikka asks Trevor if he's had lunch. He hasn't. She has to suggest several times that he go; he's still thinking about the clip.

3:50 Matt comes back upstairs. The MDF prototype broke; several design details are clashing and weakening the piece. He'll rework the tongue-and-groove joint and will run a new test piece tomorrow. They pore over the schedule again.

4:29 Marrikka reminds Trevor, who is sitting at his desk finishing a sandwich, that they need to finish the Inspectional Services diagram by the end of the day.

"But it's lunchtime," he says.

4:35 Trevor asks Marrikka if she's checked her e-mail in the last two minutes.

"No."

"It's Damon. He says he can't get our Lumasite things out of his head and he's drawn up a new detail and put it on CAD."

4:41 "It's 4:41," Marrikka murmurs to herself. She turns to Matt, who has just come back to his desk. "What can you do for 20 minutes?"

"I'll figure something out." ■

Joan Wickersham's memoir *The Suicide Index: Putting My Father's Death in Order* was a 2008 National Book Award finalist.





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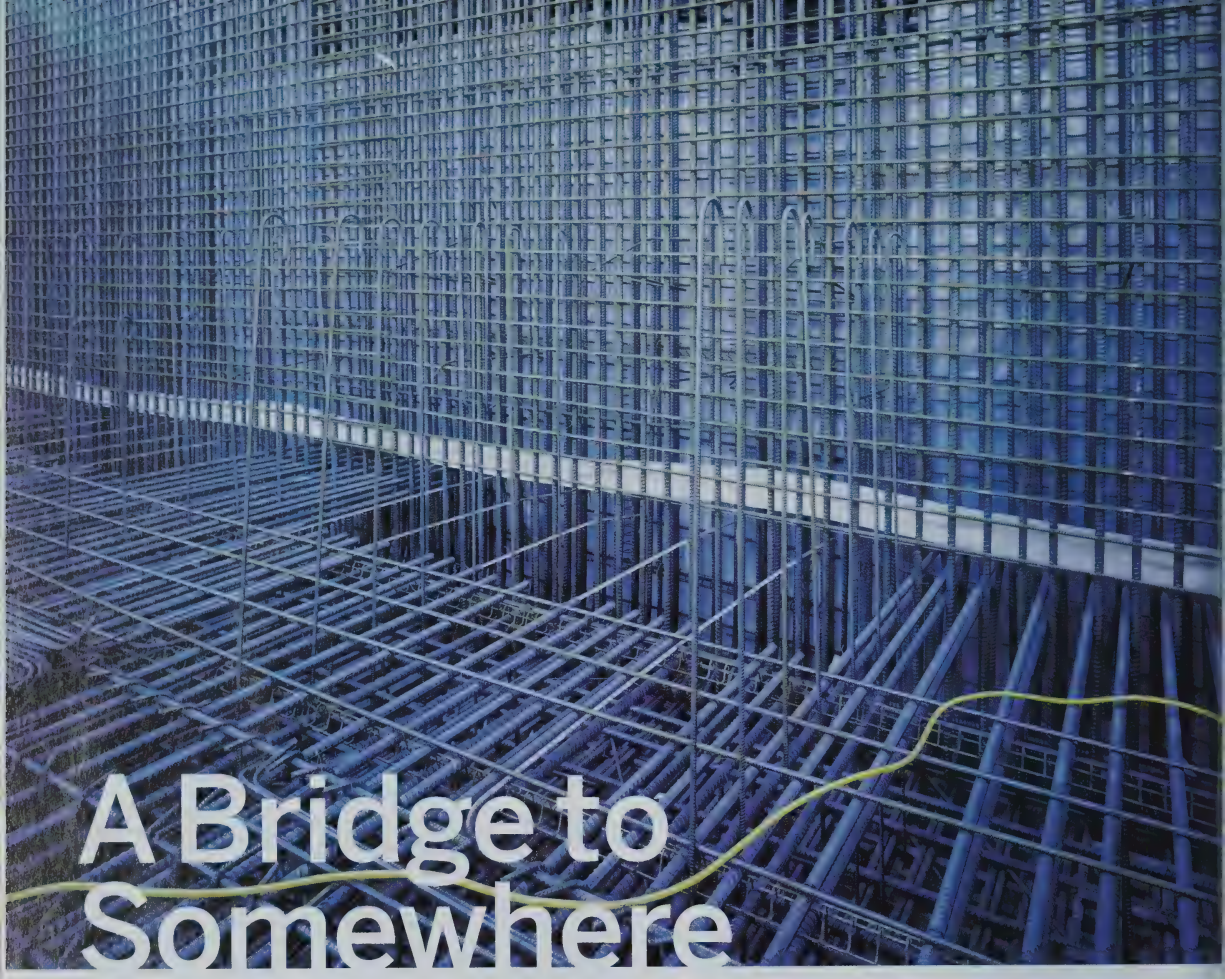
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A Bridge to Somewhere

The Case for a National Infrastructure Policy

Filling potholes and making trains run on time is not enough.

PARTICIPANTS

Sarah Williams Goldhagen is the architecture critic for *The New Republic* and author of *Louis Kahn's Situated Modernism* (Yale University Press, 2001).

David Lazer is an associate professor of political science and computer and information science at Northeastern University and director of the Program in Networked Governance at the Kennedy School at Harvard University.

David Luberoff is the executive director of the Rappaport Institute for Greater Boston at Harvard's Kennedy School of Government. He is the co-author (with Alan Altshuler) of *Mega Projects: The Changing Politics of Urban Public Investment* (Brookings Institution Press, 2003), and has also been a columnist on infrastructure issues for *Governing* magazine.

Hubert Murray AIA, RIBA is an architect and manager of the Sustainable Initiatives Program at Partners Healthcare in Boston. From 1989–1992, he was the chief architect for Boston's Big Dig.

Elizabeth Padjen FAIA is the editor of *ArchitectureBoston*.

Jeffrey Simon is the director of infrastructure investment for the Commonwealth of Massachusetts. He was previously president of Simon Properties and president of Actus Lend Lease and has served as executive director of the Massachusetts Land Bank.

Anne Whiston Spirn FASLA is a professor of landscape architecture and planning at MIT. Her books include *The Granite Garden: Urban Nature and Human Design* (Basic Books, 1984); *The Language of Landscape* (Yale University Press, 1998); and, most recently, *Daring to Look: Dorothea Lange's Photographs and Reports from the Field* (University of Chicago Press, 2008).

Opposite: Form work rebars for Big Dig/Central Artery. Page 18: Deer Island Wastewater Treatment Plant. Page 21: Ted Williams Tunnel. All photos by Peter Vanderwarker.

Elizabeth Padjen: Over the last year, infrastructure has become associated in the public mind with the federal stimulus package and, as a result, the phrase "shovel-ready" has become the measure of good infrastructure or, at least, infrastructure that we'll support. Which means that timing is the real yardstick for determining what gets built. That is obviously not a good way to make policy, nevertheless it seems to be what's driving the public discussion right now. Do you detect any real impetus or any real desire to develop a cohesive infrastructure policy?

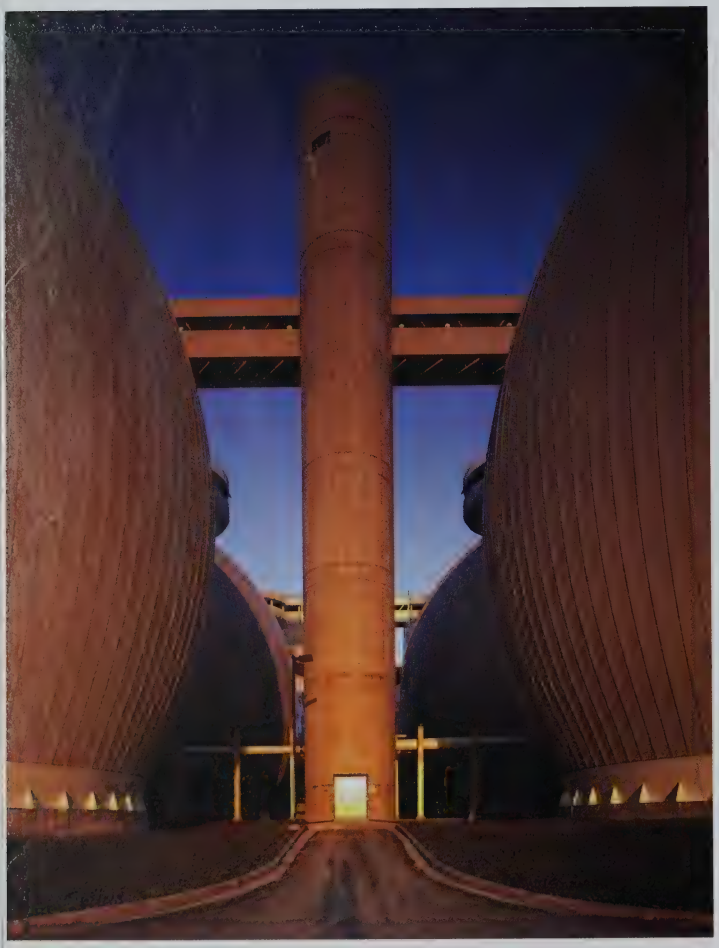
Jeffrey Simon: The stimulus program is not just an indication of infrastructure policy — it was driven by a different goal: creating and retaining jobs. The decision to fund shovel-ready projects was a means to an entirely different end, the end being getting people back to work quickly. It was completely divorced from whether infrastructure had any inherent value or not. A lot of people say to me, "Why are you spending all this money on a bunch of paving projects?" It's an absolutely legitimate question for everyone except for the unemployed person who now has a job paving roads. In that person's mind, that's a completely legitimate project. But even though this was conceived as a jobs program, each of the projects itself has value.

Hubert Murray: Just as taxes are supposed to be the price of civilization, I think infrastructure is the cement that holds our civilization together. The crisis in infrastructure — the disrepair — is a manifestation of a lack of faith in our public realm, which we had in the past, say, in the 1930s, when money went to the construction of highways and dams and electrical grids. That issue, which is both political and philosophical, has to be addressed before we can even begin to talk about the nature of the infrastructure that we need to hold us together or how to pay for it.

Elizabeth Padjen: A couple of years ago, Sarah, you wrote an essay for *The New Republic* that I still think is one of the smartest pieces about infrastructure that I've read ["American Collapse," August 27, 2007; www.sarahwilliamsgoldhagen.com/articles/American_Collapse.pdf]. It appeared right after the bridge collapse in Minnesota and the Con Edison steam pipe bursting in New York. You said, "Infrastructure is one crucial point at which politics and architecture merge." Nothing's really happened since you wrote that piece.

Sarah Williams Goldhagen: That's not exactly true; a lot has actually happened. The tagline of my article, which I had nothing to do with, was "Making Infrastructure Sexy." And now infrastructure *is* part of the public discussion. But it's all about putting fingers in dikes — the shovel-ready projects that are connected to stimulus. The Obama administration has lots of good intentions, but I don't see anyone articulating what steps need to be taken to realize the goals that most people agree are necessary for a humane 21st-century urbanism: denser communities, pedestrian-friendly development, and multiple, overlapping, regional transportation systems incorporating air, fast rail, and automobile.

I think Hubert is right — nobody has faith in the public realm. But a larger issue is that the infrastructure problems we now have cannot be solved by the current political system, which is balkanized into municipalities and state systems and the federal system. Infrastructural problems now are regional: they cross municipal and state lines. That means that discussions about infrastructure must include not only big visions but also concrete plans for implementation.



David Luberoff: "Infrastructure" is a word that really didn't come into play until the '80s; before then, we had what was called "public works." It's very hard to get people excited about infrastructure, because it's a conceptual word. But there are elements of infrastructure that people really like: people love trains, people love bridges. We lose something when we talk about infrastructure, although the word does capture the sense of these networks and systems that bind us together.

Sarah's right that they're a hodgepodge not only at different levels of government but also between public and private sectors. The telecommunications infrastructure is almost purely private, subject to public regulation, somewhat similar to electrical infrastructure. The transportation infrastructure is a mix — we provide the roads, but the cars are privately owned; we provide airports for private airlines. On the other hand, outside of the Northeast Corridor, publicly owned Amtrak trains generally use privately owned tracks.

Infrastructure is critical to regional economic development, and there's a long history in the United States of trying to figure out whether this is a national or a regional responsibility. For the most part, we've regionalized most of the important forms of infrastructure, such as roads, airports, sewage treatment. But I suspect we'll never create a cohesive regional infrastructure system, because in the American political system, we tend to solve problems one at a time. So when a crisis emerges, the response tends to be to turn it over to a regional entity, and often to govern it in such a way that is supposed to remove it from day-to-day politics by creating authorities, such as Massport, to run airports, or the Massachusetts Water Resources Authority, to run water and wastewater treatment systems.

Elizabeth Padjen: One of the most enduring symbols of infrastructure implemented on the national level is the interstate highway system, which may also represent the last time there was a significant national focus on infrastructure. If we think of infrastructure as providing some kind of public good that will support economic activity and health and welfare for all of the people, are we working off old definitions and an outdated understanding of infrastructure? We now have new technologies that weren't even imagined when the highway system was developed.

David Lazer: You just said the last big national effort was the highway system, but what about the Internet? Doesn't that qualify as infrastructure? I'd say absolutely yes. Obviously, it's revolutionary, but what makes it especially interesting in this discussion is its potential interplay with more traditional forms of infrastructure. For example, it allows us to collect information in a very decentralized fashion so we can use our existing infrastructure more efficiently or develop a new infrastructure that is smarter. We talk about having a smarter electricity grid. Well, one way of dealing with peak load, rather than building more electricity plants,

Infrastructure both opens up and closes down opportunities. If it's working well, infrastructure provides equal access to resources. If it's not working well, it funnels access to resources to certain segments of society and closes out opportunities for other folks.
Anne Whiston Spirn FASLA

is to program everyone's thermostats to be sensitive to peak loads so they'll all turn off when it's really hot. Similarly, we can now track road use, which can lead to more efficient transportation systems. And the SENSEable City Lab at MIT has developed devices to understand trash flow. There's a growing effort to apply data-driven processes to the use and design of infrastructure.

David Luberoff: In addition to the Internet, I would mention the parallel construction of the cellular telephone system. It has had obvious implications for traditional infrastructure, but also tremendous implications for where people are in space and time. If we are always connected, that is probably as powerfully transformative as a lot of traditional infrastructure, whether the automobile/highway system or the mass transit system. It's less obvious because we don't see it.

David Lazer: That's right. With an iPhone, you have the Internet and GPS in your pocket. Suddenly people can interact with infrastructure in entirely different ways. They are more actively involved in decision-making on the personal level, such as where to drive or when to turn on the air-conditioning at home, as well as simply reporting information.

Hubert Murray: We need to think about why we are building infrastructure in the first place. The examples you're giving of modern technology as infrastructure represent an infrastructure that supports individuation. These are centrifugal forces in society, whereas a couple of generations ago, we were talking about bridges, highways, tunnels, even airports, that brought us together as a society. Is it any coincidence that this beautiful object, the iPhone, is blossoming simultaneously with the collapse of our common infrastructure, our bridges and our tunnels and our streets?

David Luberoff: I would argue that the bridges and roads were a decentralizing force in their time. There was this new technology — the automobile. The car was the iPhone of its time — the technology that everybody wanted.

Anne Whiston Spirn: It's not just the focus on the individual cell phone as opposed to bridges and highways, but the focus on the individual cell phone as opposed to the public telephones that used to exist throughout our cities and towns. Have you tried to find one lately? A lot of people can't afford a cell phone. Infrastructure both opens up and closes down opportunities. If it's working well, infrastructure provides equal access to resources. If it's not working well, it funnels access to resources to certain segments of society and closes out opportunities for other folks. We see that especially in communication infrastructure, with access to high-speed Internet in some parts of the country and not in others, and even within some city neighborhoods but not others. Which means that certain kinds of economic activity are not going to occur in the areas that are not well-served.

Elizabeth Padjen: The Rural Electrification Project in this country was at some level a social-justice exercise, providing federal funding in support of a national goal to be implemented locally by private electrical companies. Today we largely leave the new technology networks to private enterprise, in terms of decisions about location, markets, and coverage. I have an aunt who lives just outside Madison, Wisconsin, and has dial-up service. It drives her crazy. Verizon is bringing 4G service to Boston and Seattle — logical rollout cities, from a private enterprise point of view — but when is that ever going to get to my aunt?

Jeffrey Simon: You don't even have to go that far. Massachusetts has submitted an application under the Recovery Act to bring broadband technology to the western part of the state. Broadband is in place as far out as Route 91, but beyond that, as soon as you leave the Mass Pike, there's nothing. There's no G, let alone 4G. It's shocking, especially when you think about schools and fire and police and hospitals. It's one thing to talk about promoting medical e-records, but if you have no way to get them, it makes no sense.

Anne Whiston Spirn: The implications for national policy are enormous and the questions are tough ones. Do you subsidize new infrastructure in new areas to the same extent as funding the reconstruction of existing infrastructure that was built 100 years ago or more? Infrastructure by its very nature will structure urban development for years to come. So when we make decisions about how and where to build infrastructure, we are making decisions that are going to affect human settlement forms for centuries, as well as the lives of individuals and the well-being of communities in terms of their access to resources.

David Lazer: The issue is complicated by the simple fact that we are a large country. People like to compare infrastructure here to Europe. But it's an unfair contest, because Europe is much smaller, with a much higher population density. Speaking very generally, you're never going to be very far from key infrastructure in Europe, whereas we have vast tracts of rural areas. To some degree, we recognize, and even accept, that rural areas have always had inferior access to certain things. But it's always been an interesting and important question: what should be the coverage guarantees of infrastructure? We decided, for example, that the postal system would cover everyone, regardless of the cost. And of course, if we subsidize new infrastructure, including new communication infrastructure, in the rural areas, we end up encouraging the very kind of development that many people think we should discourage.

Jeffrey Simon: Where infrastructure tends to be done especially well is where there are constraints of geography or location. I really got an appreciation for this living in Bermuda for a couple of years.

Bermuda is 21 square miles: one mile wide, 20 miles long, 750 miles out in the middle of the Atlantic Ocean. In the US, if you need to build an incinerator, people typically say put it out of town, somewhere "out there," wherever "there" is. You can't do that in Bermuda. Everything has to go somewhere within that 21 square miles that 60,000 people live on. So the way they approach infrastructure is very different, with a different attitude toward efficiency. They were doing sustainable development out of necessity long before the term had even been created. When all of my drinking water came off my roof, the prospect of running out was not only real but actually happened a number of times. My habits changed very quickly.

Elizabeth Padjen: Your example is a reminder of a profound change in the way we think about infrastructure now, which is sustainability. It's an overlay that wasn't really part of the equation 100 years ago.

> The communities that didn't get highway ramps 50 and 75 years ago died. Arguably, the communities that aren't on the broadband/wireless grid are going to die. Which form of infrastructure do we think people really need?
> *David Luberoff*

Hubert Murray: I think that global warming and the possible effects of climate change are beginning to seep into the public consciousness and give us a common purpose; and on that common purpose we can build a new infrastructure. That's an optimistic view. Only three years ago, just before Al Gore released his film, most people were clueless about the issue. Now it's the constant subject of tabloid newspapers and radio talk shows. A general consciousness is building up, one we have to respond to with the building of an infrastructure that goes beyond the shovel-ready, because it actually needs some thought.

Jeffrey Simon: But if I had to weigh the price of gas against global-warming consciousness for its ability to get people mobilized quickly in the way that you're talking about, I would go with the price of gas. You certainly could argue that the best thing we could do is to establish a five-dollar-a-gallon federal tax on gas — all of a sudden you'd find all of the incentives lining up in the right direction. But that has social impacts that are unacceptable.

Sarah Williams Goldhagen: Our land-use patterns are the result of social engineering through infrastructure that started in the 1930s and went through to the '50s and '60s. Now the discussion should be, can we use infrastructure to create the right kind of new land-use patterns without too much undesirable, class-based social fallout? That is not a discussion that I hear people having. What would those land-use patterns be? How do we get there, what do we use, and how does technology fit into all that?

David Luberoff: The danger of using infrastructure to push land-use patterns is that somebody will inevitably say, "Why am I paying for a thing I don't want?" because infrastructure investments can create tremendous winners and big losers.

Jeffrey Simon: I think you're right. Consumers want to see a direct connection between what they pay and what they get. We're seeing that now with the Big Dig, which has vastly improved the quality of life in the city of Boston, despite the cost. But the decision to pay for it through turnpike tolls led a group of toll-payers, mostly from western Massachusetts, to pursue a lawsuit — they don't see that the Big Dig is of any benefit to them.

David Luberoff: I recently read the state's new plan for the South Coast Rail, which would extend the line from Fall River to New Bedford and is being touted as an economic-development project. We know there's a link between infrastructure settlement patterns and economic productivity. But the South Coast Rail is going to be about a $2-billion project, and the state's numbers say it will carry about 5,000 people a day, which is 2,500 round-trip riders. For $2 billion dollars, I could probably wire all of western Massachusetts, or make Fall River and New Bedford completely wireless. The communities that the railroads bypassed 150 years ago died. The communities that didn't get highway ramps 50 and 75 years ago died. Arguably, the communities that aren't on the grid are going to die. Which form of infrastructure do we think people really need?

Jeffrey Simon: You're always making a choice. It's always a tradeoff.

Elizabeth Padjen: But how do you make that choice?

Jeffrey Simon: It's a difficult discussion because you're not usually presented with the total cost of A versus the total cost of B. You're always looking at the margin. The South Coast Rail is a good example of an infrastructure investment that relates to a number of complex issues. For example, is it worthwhile to connect Fall River and New Bedford to Boston? Probably. And it certainly encourages people to get out of their cars.

The 2,500 people who will ride the train daily are the ones who have the most direct benefit, but that's just one side of the equation. The South Coast Rail is also part of a larger discussion about rail in New England. Governor Patrick has joined with the other New England governors to work on a regional rail initiative and to pursue federal stimulus funding to make that happen.

Sarah Williams Goldhagen: The federal stimulus program seems to be driving a lot of discussion about rail across the country. The administration's current focus on high-speed rail seems to be the closest thing we've seen to an infrastructure policy or vision.

Jeffrey Simon: The stimulus program gets all the publicity, but it's not the only thing driving infrastructure spending. Massachusetts



has accelerated its program to repair bridges — it seems as though you can't drive anywhere now without seeing some bridge being worked on. Crumbling infrastructure has a huge impact on the psyche of the average citizen. The world isn't crumbling down in the way that spalling concrete and exposed rebars might suggest, but just seeing deteriorating bridges is discouraging. Conversely, seeing them being repaired not only creates the feeling that things are getting better, but also reinforces the fact that someone cares enough about the public to fix them.

Elizabeth Padjen: Fixing bridges is one thing, welcome as that is, but don't we really need to fix the system that disinvests in maintenance, that encourages deferred maintenance? We developed the One Percent for Arts program a long while ago. It seems to me there should be One Percent for Maintenance associated with any public investment.

Hubert Murray: *The New York Review of Books* recently ran an essay by Everett Ehrlich and Felix Rohatyn on the $3-trillion deficit in deferred maintenance that we have across the country. They're proposing a new way of financing infrastructure, the National Infrastructure Bank. And I think that the new administration is listening.

David Luberoff: When agencies such as Massport that are primarily funded by user fees borrow money for big capital projects, the lenders often require that the agency keep those new facilities in a state of good repair. In contrast, maintenance of highways and bridges often comes out of the general operating budget, which means it's an easy thing to cut. No politician ever got any votes for cutting a ribbon on a maintained bridge; you only get that with a new bridge.

I recently talked to someone at the Deer Island sewage treatment facility — a huge piece of infrastructure — who said the most striking thing about the facility is not that it was built right, but that 15 years later, the Massachusetts Water Resources Authority, a user-funded entity that built and operates the plant, is maintaining it right. They have a total schedule of maintenance; they can tell you when things are going to be replaced. What is fascinating here is that this is an agency that has become utterly obscure to the general public, yet has maintained a professional culture that says this thing's got to keep working.

Jeffrey Simon: You think those two things are connected? I see it as cause and effect. The challenge is to have great professionalism combined with authentic transparency, to have professional decisions made in public and to have accountability for those decisions become the accepted practice.

David Luberoff: Sometimes it's cause and effect, but sometimes agencies become obscure and then they become ossified.

Anne Whiston Spirn: One thing that we haven't addressed yet is the issue of amenities. Some of the great landmarks in infrastructure are green infrastructure projects like Boston's Riverway and the Fens, which were projects that addressed important issues like sewage, storm runoff, water quality, and new transportation routes. But they were accomplished in a way that provided tremendous public amenities.

Hubert Murray: And pride.

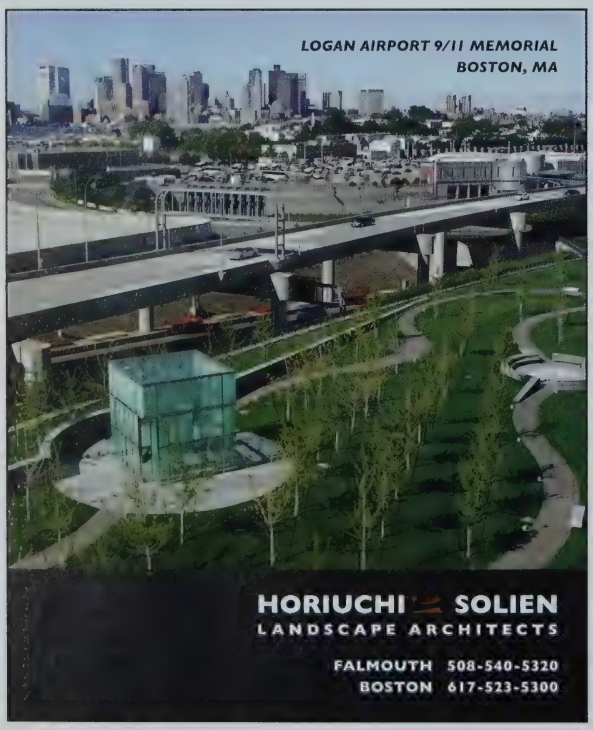
Anne Whiston Spirn: Yes, and pride. Which goes back to your comment about the public realm and the notion of finding ways to enhance and elevate projects that need to be implemented for all kinds of pragmatic reasons. The Denver Urban Drainage and Flood Control District is a contemporary example of the Fens and Riverway. Taxes were assessed on individual property owners in proportion to the amount of stormwater they were contributing to the system. These assessments funded the district, which then promoted projects that addressed flood control and storm drainage but also provided parks, trails, and bikeways. We tend to have tunnel vision, addressing one thing at a time and not looking at ways of combining functions. It leads to missed opportunities and frequently to greater expense.

Going back to Deer Island, I would not agree that it was the right solution, even though it seems to work fine now. There were many advocates of a more decentralized approach that would have included protecting groundwater supplies and watersheds in the region. That approach would have been much less expensive, and could have provided other amenities including parks and recreation, as well as the restoration of vacant land in urban neighborhoods like Roxbury and Dorchester.

Hubert Murray: The outcome might be different now. There is growing interest in decentralization, especially in terms of energy infrastructure. Typically you lose 65 percent of the power just in the distribution of electricity; it's an incredibly inefficient way of doing things, although it is very efficient politically, because one decision-maker can run the show. But Woking, a city just south of London, has converted over the last few years much of its power generation to a distributed energy network, through small neighborhood power stations using alternative technologies. They are small enough that you can individually power housing projects or institutions like schools and hospitals, too. If this model takes off, you can imagine that the structure and the politics of cities will need to change accordingly.

Anne Whiston Spirn: Although maintenance might be a challenge. The one advantage to Deer Island is that it's one facility to focus on. On the other hand, if something goes wrong, all the sewage in Boston flows out.

Elizabeth Padjen: Where does the leadership come from that can change perceptions or create a value system that is going to support something like the Denver project?



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Jeffrey Simon

Anne Whiston Spirn: When I stepped back after writing *The Granite Garden: Urban Nature and Human Design*, which is a series of success stories about how cities have adapted to their urban natural environments and ecosystems, I started to look for the common ingredients that made these successes happen. In almost all of them, it was response to disaster. Very few were the result of an idealist with a marvelous vision of what the city could be. Rather, it was a catastrophe that galvanized public support to rebuild and do things right. The Denver project emerged from a series of devastating floods of the Platte River — lives were lost, bridges wiped out, with millions of dollars of damage. So, to answer your question, I would say that every city or region is vulnerable to certain natural disasters. Know what they are and when they are likely to occur, and have a cadre of people who are ready with visions to present to the public as soon as the disaster happens. Because there's always a lag time. If it's shovel-ready when the catastrophe happens, then the impetus to rebuild is so strong that it can happen immediately.

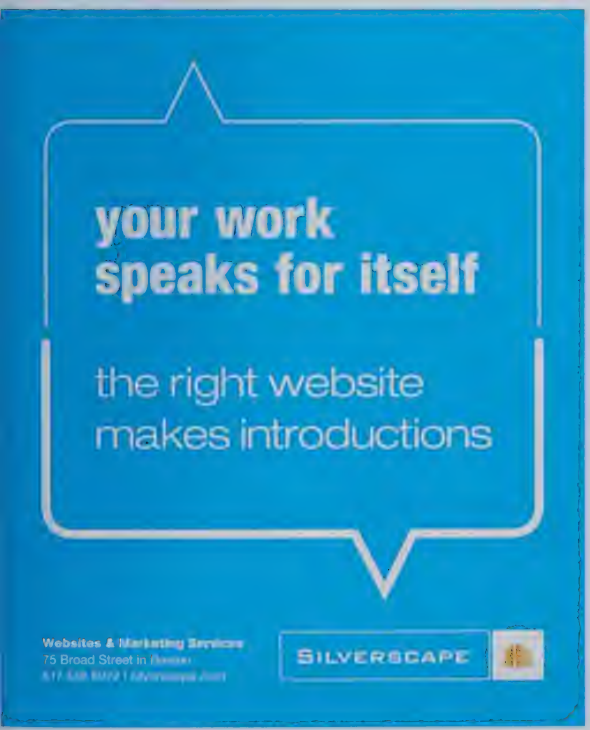
Elizabeth Padjen: We've talked about private investments, particularly in communication infrastructure, which seems to be largely driven by the private sector. We've talked about public investment. Have you seen any innovations in public/private partnerships that have worked?

David Luberoff: In one sense, everything that gets done today is a public/private partnership because, unlike the '30s when people worked for WPA and were on the government's payroll, we made a policy decision a long time ago to move to a system of contractors.

Hubert Murray: We're seeing highway authorities engage in what are called DBOM contracts: design/build/operate/maintain. Firms like Bechtel do this all over the world — public facilities run by private firms for profit.

Jeffrey Simon: What's happening now is that the privatization of infrastructure is being driven by investment bankers, not engineers. Look at Macquarie Bank coming in from Sydney and buying the Chicago Skyway and the Indiana toll road.

David Luberoff: But the public reaction has not been positive and several deals proposed after the Indiana and Chicago deals have been scuttled. The result is puzzling: we have no problem putting companies like Verizon in charge of the cellular system, but we seem to always want the government to run the roads. Most toll roads have a fairly predictable revenue stream — money that can be used to pay back a large loan, particularly if you assume that tolls will rise in the future. Sooner or later, somebody in government





will say, "I could really use a lot of money now, rather than a little bit of money each year for the foreseeable future, particularly if the toll hikes required to support the loan occur after I leave office." This is basically what Massachusetts did when it had the Turnpike Authority borrow money to help pay for some of the Big Dig.

Jeffrey Simon: There is another way of looking at public/private partnerships, which is to consider how incremental actions or changes in the private sector influence public policy. The focus on sustainability through LEED certification is a fascinating example. No government policy came up with or imposed LEED certification. It was developed in the private sector and then took off as tenants and buyers started to demand it until eventually it was adopted as policy by environmentally conscious cities. The market made that happen.

Hubert Murray: It's a very good point. I think we're about to see another example here in Boston, which has some of the highest-priced real estate in the country. It is also in one of the most vulnerable places in the country. If the sea level rises, as it is predicted to do within the lifetime of many of these buildings, they're going to have swamped basements at the very least. We have a huge impending crisis on our hands; perhaps this relates to Anne's observation about preparing for catastrophes. Partners Healthcare is addressing this head-on in the development of the proposed new Spaulding Hospital. We anticipate a 24-inch rise in sea level in Boston Harbor within the projected lifetime of the building. So we've raised the ground-floor datum and taken all the electrical equipment out of the basement as originally proposed. The term we used for looking strategically at possible disasters is "resiliency." Every single building on the waterfront has to think in the same way. And if I may say so, the Central Artery Tunnel has to think in that way, because within an 80-year time period, the Central Artery is vulnerable.

Jeffrey Simon: That must have been an interesting meeting. You go in and you say, "We've raised all the utilities up to the first floor." They ask, "Why did you do that?" And you answer, "Well, we think the harbor's going to rise 24 inches."

Hubert Murray: We did a considerable amount of research and wrote a protocol that we want to share with the city and the state.

Jeffrey Simon: But this touches on something I think about a lot, which is the long-term implications of what we do. How do you use short-term money to accomplish long-term goals and do it in a really responsible way? And along the way, how can you make fundamental changes to the way state government does business? People who talk about infrastructure now invariably get around to talking about the '30s. There's a whole legacy from that period of beautiful work, which we're not getting out of the current program, because it wasn't designed with those goals in mind.

Hubert Murray: One of the things that thrilled me about coming to



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this country from the UK was the opportunity to see the work of the Tennessee Valley Authority. The quality of design on purely utilitarian structures, and the multi-disciplinary nature of the TVA, transformed that part of the country in a remarkable way. It was something of which the country could be proud, and for which it was known all across Europe. And somehow, we've lost that. Coming from Madrid Airport to Logan Airport, for example, is like going from a cathedral to a hovel.

Jeffrey Simon: We have the Zakim Bridge. We haven't totally lost it.

Anne Whiston Spirn: The fault lies on both sides. Designers have relinquished a role in infrastructure, but on the other hand, architects and landscape architects aren't the first professions that come to a public agency's mind when they are planning an infrastructure project. But there's an optimistic sign: over the past few years, we're seeing architecture and landscape architecture departments taking on large infrastructure projects as studio projects. At MIT, for example, a collaborative workshop between the department of architecture and the civil and environmental engineering department is in the works.

Sarah Williams Goldhagen: Landscape architects right now are doing a better job than architects are of convincing the public that the design of the built environment, whether it be a public monument, a park, a sewage-treatment plant, or the High Line, directly affects people's quality of life, both in the present and in the future. In general, landscape architects seem to view working for an improved public realm as part of their professional obligations. And the Landscape Urbanists have done an especially impressive job of creating a public profile for themselves, one that could potentially translate into their playing a major role in the public's views of how the built environment might best be reconfigured.

David Lazer: Maybe design has been left out of the old forms of infrastructure, but it's certainly part of the new forms. We talked earlier about the iPhone, which is all about design, as is the whole structure — in a very real way, the whole infrastructure — that Apple has built behind it.

Jeffrey Simon: Design gets left out of the discussion because designers let that happen. I heard a designer at a conference complaining about the whole role of the owner's rep on a construction project. Well, the owner's rep developed because architects failed to interface with their customers in an acceptable manner. It's the same with design — the design profession has failed to communicate perceived value in good design. There was a time when the finest design was reserved for public buildings.

David Lazer: The one thing that building infrastructure has going for it is the very fact that it leaves a lasting legacy, which provides an incentive to politicians. When you leave a TVA or even a Big Dig, you get a little touch of immortality. ■



Planes, Trains, and Automobiles

Transportation @ MIT Rethinks Everything

by James McCown

"We're literally reinventing the wheel," says William Mitchell, director of the Media Lab Smart Cities Group at Massachusetts Institute of Technology. Mitchell points to the revolutionary in-wheel traction and steering system of the CityCar, a stackable, all-electric, two-passenger vehicle that could radically alter personal urban transportation. Mitchell is right — with no steering wheel, no central motor or drive train, and the ability to be picked up and dropped off at multiple charging stations in virtually any city in the world, CityCar owes little if anything to conventional automotive thinking. And that's a good thing.

Transportation @ MIT is a vast undertaking that brings together multiple disciplines and schools within an institute that is, by myth and reality, the geek capital of the world. What better place to take on a problem so inextricably linked to data and technology? Where else to analyze the world's urban infrastructure and how it can best facilitate the efficient and ecologically sound movement of people and goods?

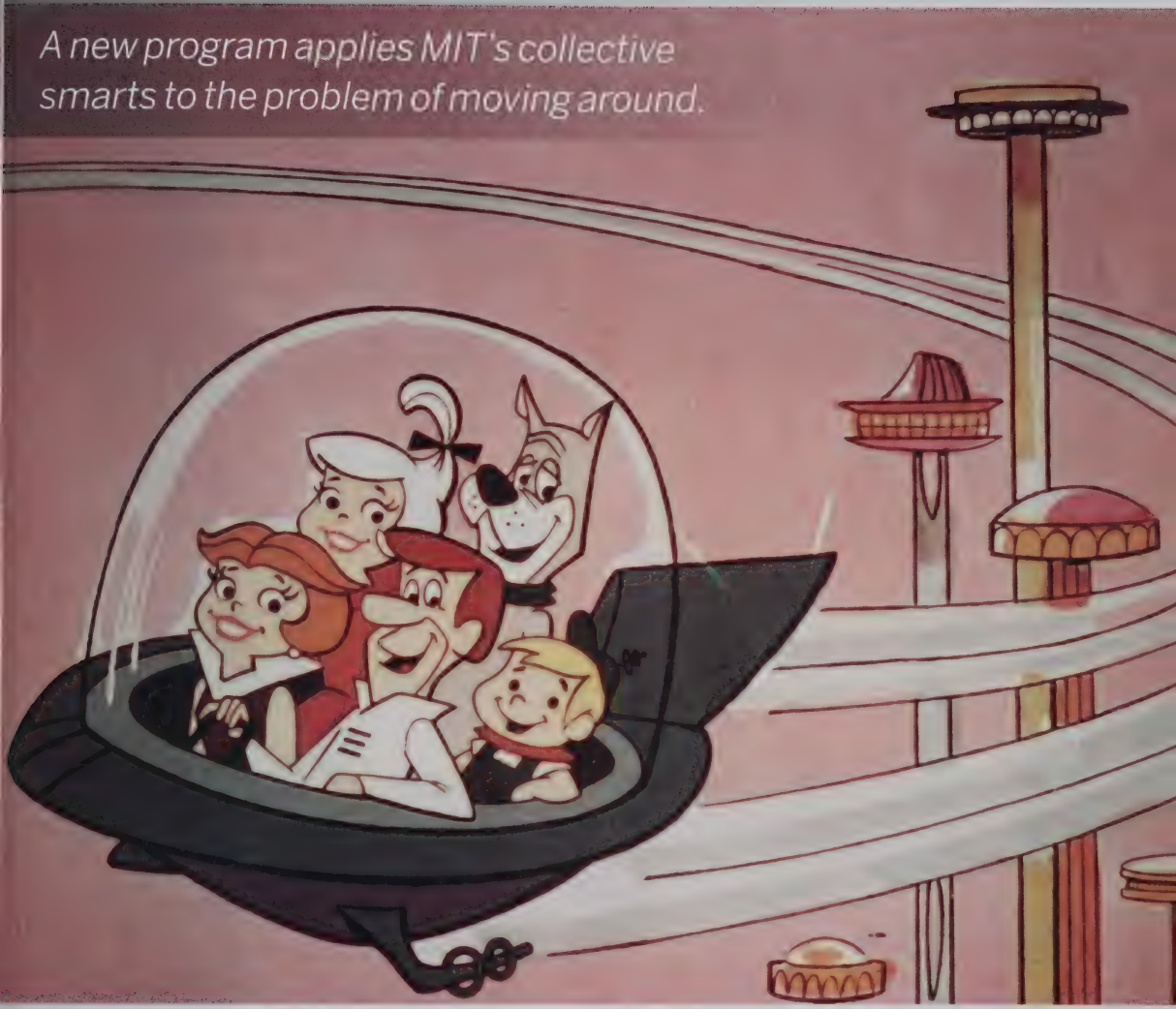
Because of the size and complexity of both the issue and the institute, it's not surprising that the initiative is made up of a sometimes confusing alphabet soup of acronyms and project names: ITEAM (Integrated Transport, Energy and Activity-based Model), CityMotion, Smart City, SENSEable City Lab, and Mobility-On-Demand, among many others. But leaders of *Transportation @ MIT* believe that, collectively, all of these efforts can galvanize public awareness of transportation as an urgent national issue, attract research funding, and encourage cross-disciplinary academic collaboration.

"As a starting point, we did a survey of 1,200 MIT faculty members and asked them if the research they were doing could be applied to transportation," said Cynthia Barnhart, associate dean for academic affairs at the School of Engineering and director of the initiative. "We were amazed when 338 — more than a quarter of them — said yes. So we decided to start a program that would leverage all of this expertise." While officially under the auspices of the School of Engineering, *Transportation @ MIT* bridges that sector with the School of Architecture + Planning and the Sloan School of Management.

For more than a century, architects and urban planners have recognized the interdependence of transportation and the design of buildings and cities. But it's historically been a top-down process — planners and designers foisting their grand visions on an often-reluctant public. Witness Le Corbusier, who in his epochal treatise *Radiant City*, felt it was well within his purview to dictate the exact route that residents of a high-rise would take to their cars. Now, technology is allowing researchers to mine a rich store of information from the bottom up — gauging how people actually live and making transportation planning decisions accordingly.

"There's a wealth of data already there, with iPhones and GPS systems," said Christopher Zegras, an urban planner and one of the researchers behind ITEAM, the transport and energy component of the initiative. "The problem with urban-planning data in the past was that you'd do surveys and traffic counts, but people tended to tell you what you wanted to

A new program applies MIT's collective smarts to the problem of moving around.



hear, so it was very unreliable." But now, in a program called CityMotion that has been applied in places like Mexico City and Santiago, Chile, volunteers agree to have their exact modes of transportation (rail, car, bus), time of day, walking routes, origins, and destinations all tracked in real time, which in turn informs decisions about transit subsidies and urban-planning interventions. Paired with this, transit agencies around the world are increasingly making available to the public real-time, GPS-generated information about the exact location of trains and buses.

John Attanucci, an MIT civil engineering lecturer, is frustrated that more American transit agencies don't leverage this valuable information. "Most of the agencies already have this data and are not using it to best advantage," he said. "Every semester, I get computer-science students asking me why the MBTA [Massachusetts Bay Transportation Authority] won't release their automatic data location system, which the students want to load onto their iPhones." He added that a pilot program at MIT has a microchip embedded into volunteer student and faculty ID cards, tracking their to-and-fro much as an iPhone can. The institute then plans to review the data as part of its parking and mass-transit subsidy program — with the goal of promoting greater use of public transportation.

Indeed, understanding where people want to go proves to be just as important as considering how they get there. "Subways and high-speed rail lines are fixed infrastructure, and that's where our little cars come in. The train station is never your point of origin or final destination," said the Media Lab's Mitchell, former dean of the MIT School of Architecture + Planning. The CityCar resembles, and is about the same size as, the increasingly ubiquitous Smart Car. And yet it is fundamentally different. Motors embedded in each of the four

^ *The Jetsons*. Image by Hulton Archive/Getty Images.

A metaphor equating a city to a biological organism runs through the entire enterprise. Professor John Fernandez uses the term "urban metabolism" to describe not just the movement of people but also of material.

wheels propel it forward, and a "drive by wire" system controls the steering instead of the usual mechanical arms and gears. This leaves a surprising amount of passenger room — about as much interior space as a 3-Series BMW, according to Ryan Chin, a research assistant at the Media Lab.

"It can fit two people very comfortably," Chin said, adding that the entire outer shell is hinged at the center, allowing it to "fold" into the most minuscule parking space and be "stacked" at a train or bus station, where it will recharge until a customer simply swipes a credit card, as with Zipcar, to gain access. Furthermore, the hinge serves as a safety device — absorbing impact in a crash. The car can also turn on its own axis. The Media Lab is at present vying for a grant from the US Department of Energy for a pilot program to place 100 CityCars on the streets of Boston.

The RoboScooter and GreenWheel bicycle round out the "personal transportation" triumvirate currently being developed at the Media Lab. The scooter is also a stackable electric vehicle, with a center hinge that allows it to be folded up to the size of a large suitcase and carried. The GreenWheel bicycle is a standard-issue bike that has an electric motor, battery, and generator all embedded into an aluminum-pancake rear hub. The Media Lab envisions developing kits whereby bike owners can do the simple retrofit themselves. According to Mitchell, the GreenWheel can give a 25-mile-plus range, and more if you choose to pedal. The focus now is on making bike stands and charging stations work as places for casual and spontaneous human interaction.

"Paris has demonstrated the success of bike sharing," Mitchell said, referring to a program called Vélib', a Gallic melding of the words *velo* (bike) and *liberté*. "But what you want when designing a system is what I call the 'village well' effect. I understand that in Paris the place to pick up bikes is also the place to pick up girls."

For all of the importance of ground transportation, civil aviation remains a crucial transportation infrastructure around the world. MIT aeronautics gurus are working on a program called NASA N+3, funded by the space agency, that envisions what a commercial airliner three generations hence will look like. In addition to trying to develop a more fuel-efficient plane, the teams are working to reduce noise and pollution — both of which make building new airports and runways in the US virtually impossible.

"It took 28 years just to get the most recent runway at Logan



Airport open," said John Hansman, Jr., director of the MIT International Center for Air Transportation. "People would rather have a nuclear power plant next to them than an airport."

Researchers in the N+3 program are doing work that seems equal parts Jetsons and Flintstones — exploring futuristic looking, silent "flying wing" aircraft, as well as alternative fuels that can be grown or extracted from the earth. "Jet fuel has to be liquid," said Jim Hileman, an MIT engineer on the N+3 team. "But the technology exists to develop jet fuel from natural and biological sources." Hileman and a team of engineers are already studying the viability of synthetic liquids from coal and the organic matter known as "biomass."

A metaphor equating a city to a biological organism is one that runs through the entire *Transportation @ MIT* enterprise. John Fernandez, associate professor of building technology, uses the relatively new term "urban metabolism" to describe not just the movement of people but also of material — an increasingly urgent concern for architects and planners. "We have to be concerned with what materials are needed, where they come from, and how much waste they produce," Fernandez said. "So someone doing a material flow analysis of Phoenix can use the same standards as someone doing an analysis of Boston."

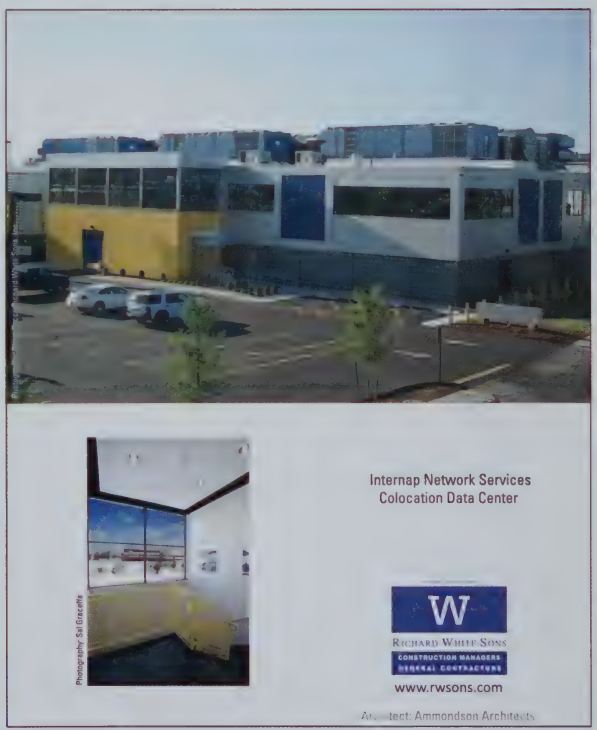
Just as the earth's natural systems underpin the work at *Transportation @ MIT*, so does economics. John Sterman, a professor of management at the MIT Sloan School, is doing in-depth studies of how, when, and why consumers will adopt private transportation modes using alternative energy. In turn-of-the-19th-century Boston, New York, and Philadelphia, he notes, electric vehicles, both private and public, were thought to be the future. But the petroleum-powered internal-combustion engine quickly triumphed and remains dominant today due to the rapid construction of the required infrastructure, such as gas stations and highways.

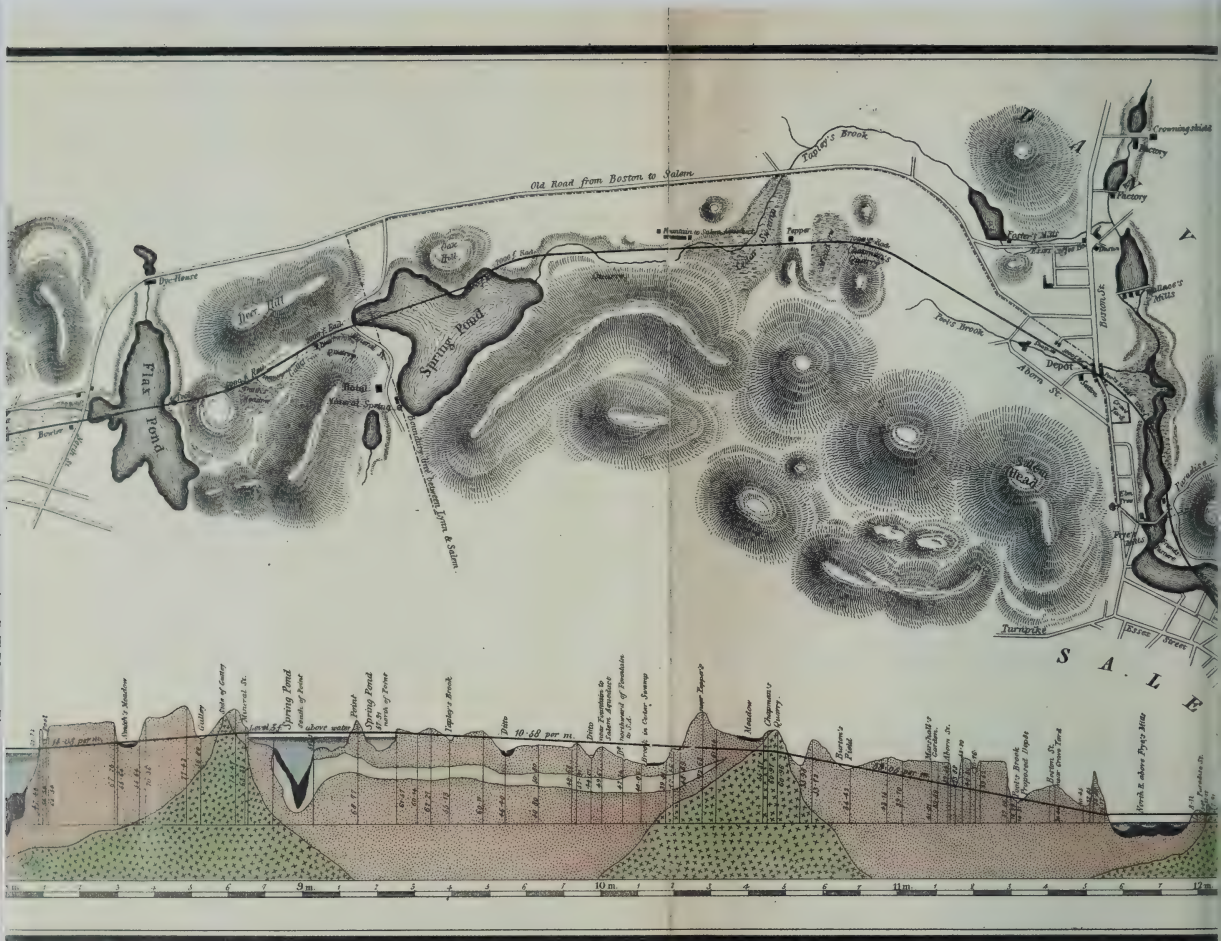
"What would happen today if an alternative fuel source were available with all of the features of a gasoline-powered, standard internal combustion engine? The answer is, not much," Sterman said. "There's no alternative-fuel infrastructure. Low gasoline taxes, the dominance of the petroleum industry, settlement patterns, and transportation networks have all favored the gasoline-powered engine." Now, he said, policy-makers must enable the "diffusion" of alternative fuel sources until their infrastructure reaches a critical mass. In much the same way, he added, they must also use the "lever" of pricing as a means of decreasing reliance on the automobile.

"We've long privileged automotive travel at the expense of other modes," Sterman said. "Pricing of what we call common-good resources — roads, rail, airports, and other infrastructure — is an important tool. People think roads are free, but they're not." ▪

James McCown is a Somerville, Massachusetts-based writer specializing in architecture, design, and real estate.







Points of View

How we view infrastructure says a lot about how we think about infrastructure.

by **Ian Baldwin**

A black line cuts smoothly across a gaping river and curves artfully around uncouth hills. It skirts the streets of Salem and Lynn and skims over the Saugus salt marsh before coming to an end at the Mystic River. This is the route of a planned railroad between Chelsea and Beverly, Massachusetts, drawn in 1836 by an engineer named Browne for the merchant and philanthropist Thomas H. Perkins. Like the many other route surveys drafted during the country's early railroad boom, the map has an elegant single-mindedness. It cares only for geography. It explains each curve in the tracks with a knob to be dodged or a village to be served.

Nearly a century later, the now-iconic London Underground diagram appeared. The labored line of the railroad as it negotiated the countryside is gone, replaced by smooth vectors coursing at zero, 45, or 90 degrees over a blank background. There is no terrain save for the broad stroke of the Thames. The Underground's odd alignments along medieval streets, its awkward transfers between platforms in endless winding tubes vanish. For the first time, the sprawling, incomprehensible metropolis looks like a single entity, a network of places drawn into a whole.

The two radically different maps reveal how society's understanding of the railroad changed. In 1836, a railroad connecting point A to B was a triumph of engineering over nature. In 1933, a mass of railroads girding the world's second-largest city was a triumph of organization. The Underground, its map proclaimed, was not a collection of stations and platforms and trains but a frictionless system of movement, unmolested by the crowded, messy realities of the street level.

A few years ago, I found myself teaching a college course about infrastructure. In gathering images for my lectures, I began to be fascinated by the diversity of approaches to visualizing the subject. Architecture's plans, sections, elevations, and perspectives have changed little in the past centuries, constrained by drawing-board technology and the need to communicate clearly with client and contractor. Infrastructure is drawn, photographed, mapped, and diagrammed by artists, engineers, and laypeople. These depictions necessarily crop the subject and frame a subjective view, revealing attitudes about scale, technology, and urban growth.

Among those attitudes, three broad themes emerged, to some degree based in an evolving historical context, but all continuing to influence how we think about infrastructure. Understanding these three themes — the sublime, the ingenious, and the systemic — is essential to any effort to shape a public consensus on the infrastructure needs of the 21st century.

The Sublime

The Industrial Revolution created the demand, and the necessary technology, for modern infrastructure. Not since the Roman Empire had man-made constructions spanned the length and breadth of Europe's landscapes. Companies scrambled for capital to lay the turnpikes, canals, and railroads that carried raw materials and agricultural products to urban factories and markets. Engineers designed ever-larger bridges, cuts, locks, tunnels, and viaducts to carry these lines of transportation across the countryside. Docks and shipyards expanded to accommodate larger ships and increasing trade, and embankments carried the city right to the water's edge. Giant mills and factories sprang up in what had been rural hamlets, while railway tracks and stations cut into the heart of old cities.

What all these changes had in common was a dramatic increase in physical scale. In England, the first country to industrialize, views of aqueducts, bridges, and industrial sites had become common subjects for artists by the early 1800s. These pictures almost always included animal and human figures to emphasize their commanding physical presence.

The first massive public-works undertaking in the US was the Erie Canal, completed in 1825. The canal opened up the country's wild interior, popularized by romantic painters such as Thomas Cole. But the scale of its engineering also made the canal itself a source of sublime imagery. An 1826 view of the deep cut at Lockport, for example, is drawn from the perspective of a canal boat gliding beneath sheer, steep walls.

An etching published shortly after the Brooklyn Bridge opened in 1883 shows the remarkable visual effect of such megaprojects on the cityscape. The bridge's cables, deck, and distant tower dwarf a narrow street in Lower Manhattan. The modest old house in the center of the picture seems hemmed in by telegraph poles and wires, and just to its left, a façade advertises "machinery." In the foreground is a man at work and a horsecart. The picture renders at street level the city's

< *Rail-road route from Old Ferry Wharf, Chelsea to Beverly*. 1836. Courtesy Library of Congress, Geography and Map Division.

Throughout the 20th century, the view of infrastructure slowly shifted from heroically engineered megaprojects to minutely managed systems — from the miraculous to the mundane.

transformation by the machinery that brought the bridge and the telegraph network into being, overwhelming the older city built with human and animal muscle. In the previous decade, Caillebotte, Manet, and Monet had painted the railway in Paris with a similar sense of rapid change, with an interest in the poetic, rather than nostalgic, possibilities of the new landscape.

The scale of engineering around the turn of the century was a perfect match for the emerging medium of photography. The camera's ability to depict large-scale scenes in great detail was put to use on projects from sewers to subways. Photos of the construction of the Wachusett Dam in Clinton, Massachusetts, then the largest in the world, appeared on postcards and in an issue of *Scientific American*. Pictures from extreme environments most people will never see firsthand — giant valve chambers, unfinished tunnel shafts, remote oil platforms, vast solar and wind arrays — are now common, but the ever-increasing scale of these works continues to provide sublimely compelling visuals.

The Ingenious

Infrastructure is, among other things, the large-scale deployment of a technology. In the Victorian era, infrastructure itself was high technology, and depictions commonly celebrated the complexity and technical sophistication of its construction. Engineered environments were the new wonders of the world; when the Parisian sewer network built under Baron Haussmann opened in the 1850s, upper-class tourists flocked to tour it in special boating parties.

The emergence of engineering as a distinct profession paralleled a proliferation of technical graphics. In the design drawings of the period, one can see a shift from the richly textured etchings of the Victorians to a more sober, diagrammatic style, perhaps expressing the engineer's new role as a quantitative designer and technocrat.

But it was the growth of mass-circulation magazines and newspapers later in the century, driven by increased literacy, railroad distribution, and machine printing and papermaking that created a demand for popular imagery, including the latest advances in technology. Even though destined for quick consumption by a lay public, the draftsmanship of many of these images is exquisite. By the early 20th century, elaborate perspective sections and cutaway views had become a common device for showing city-building networks of subways, pneumatic tubes, and electric cables in all their wondrous complexity. David Macaulay's *Underground*, first published in 1976 and still in print, and Kate Ascher's *The Works* (2005) continue this tradition of detailed graphic explanation for a wide audience.

The Systemic

Throughout the 20th century, the view of infrastructure slowly shifted from heroically engineered megaprojects to minutely managed systems. The provision of water, sanitation, and safe power at little cost to the citizen went from miraculous to mundane, and governments focused on expanding and centralizing their existing systems rather than building new ones. Regional agencies were created to deliver clean water and protect its sources, while giant interceptor sewers delivered an entire city's wastewater to a few large treatment plants. Power plants were joined into grids that eventually crossed national borders. New communication technologies — the telegraph followed by telephony and broadcasting — were not municipal enterprises but national and global networks whose very utility was based on linkage to faraway places. Giant ships and airplanes plied global routes on fixed, frequent schedules. The federal government oversaw the building of a coast-to-coast network of highways engineered to exacting standards, making transport a matter of time, not possibility.

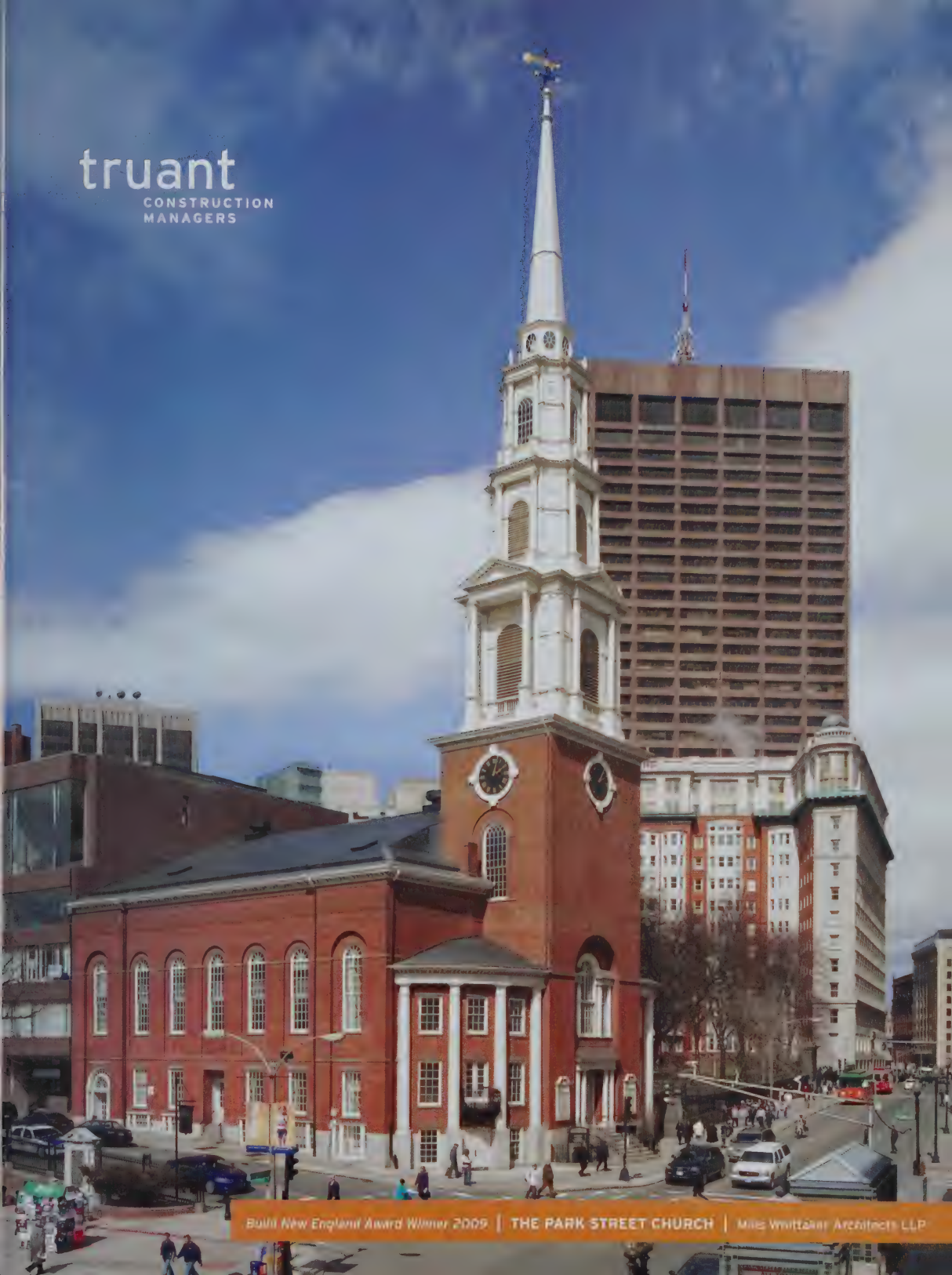
The network view, embodied so presciently in the London Tube map, still dominates today, to the degree that the terms "infrastructure" and "network" are almost inseparable. We rarely see the many processes and personnel needed to keep infrastructural systems functioning smoothly. We rely more than ever on operations we know less about: who, before the blackout of 2003, would have thought trees falling on power lines in Ohio could plunge all of New York City, Toronto, and a half-dozen other major cities into darkness, interrupt their water supplies and communication networks, and shut down their roads and rails?

As the complex and conditional nature of such systems becomes clear, another, more organic view of infrastructure is emerging. The Internet has demonstrated that we can co-opt networks with open-source and user-authored content. GPS trace data can show the tracks of individual users, equipment, and vehicles. Animations reveal the dynamic nature of systems. Even the venerable Tube map has been reconstituted and remixed in recent years in online animations showing its morph from system map to true geography and back again, as well as rearranging the whole system based on travel time from a specific station. This sort of dynamic mapping is the future of network representation. With it will come new insights into the systems and structures that support our well-being and our economy, and perhaps even a desire to reconfigure a century-old legacy of infrastructure around the needs of a fast-moving, information-based society.

Who could picture that? ■

Ian Baldwin is an architect in Providence, Rhode Island.

Note: Additional images of infrastructure through the centuries, including those mentioned in this article, are available online at www.architectureboston.com.


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Postmodern theorists writing in the late 20th-century once surmised that, during an era of airplanes, cell phones, and the Internet, the importance of geographical space was quickly diminishing. The French anthropologist Marc Augé, for example, famously claimed that modern technological developments such as these had led to a homogenization of culture that was reflected in the proliferation of "non-places" (*non-lieux*) that were devoid of any particular cultural identity. For him, a perfect example was the airport: surrounded by impersonal signs and identified by government-issued documents that cloaked individuality, travelers waiting for a plane epitomized the late 20th-century transitory experience and its lack of concern for place, cultural particularity, and personal identity.

The following images demonstrate that, whether or not the importance of geographical space has diminished, the *representation* of topographical space certainly has not. The fusillade of modern technological advances over the last several decades has only precipitated an explosion in cartographic curiosity and related explorations into data visualization. The very existence of multiple websites and conferences devoted to exploring innovative ways of depicting infrastructure cartographically begs two key questions: What lies behind this surge in the production of maps of all kinds, from simple delineations of proposed high-speed rail projects in the United States to more creative ventures in "experimental geography"? What does the practice of cartography allow us to see that we would not otherwise have seen?



FLIGHT PATTERNS
One of a series of visualizations depicting airline traffic across the United States created by Aaron Koblin, this image is based on data from the US Federal Aviation Administration for August 12, 2008. Free of traditional territorial lines and city icons, the geography of North America can be seen in terms of connections, providing a fresh understanding of land-use and economic activity. For more information: www.aaronkoblin.com.

Most fundamentally, mapping illustrates where elements of what we choose to include under the umbrella term "infrastructure" are currently located or planned. In turn, this information can be used to illuminate a whole range of other trends. For example, some major newspapers have recently shown how Obama's planned infrastructure projects tend to overlap areas that supported him on the campaign trail.

Yet, going further, the abstraction involved in this process also serves a more philosophical function: It moves us to reflect upon the spaces in which we live and work. Removed from the chaos of everyday life at the street-level, the geometrical forms of transportation networks, roadways, and even healthcare policies become visible, and therefore more comprehensible. Like a child staring into an Etch-a-Sketch, we are tempted to imagine alternative transit systems and links between disparate places, not to mention the political and economic structures that produced them.

The widespread practice of visualizing infrastructure, therefore, is not solely about concrete projects. It is a medium for self-reflection. In the words of the anthropologist Clifford Geertz, one might say that infrastructure is "good to think with."

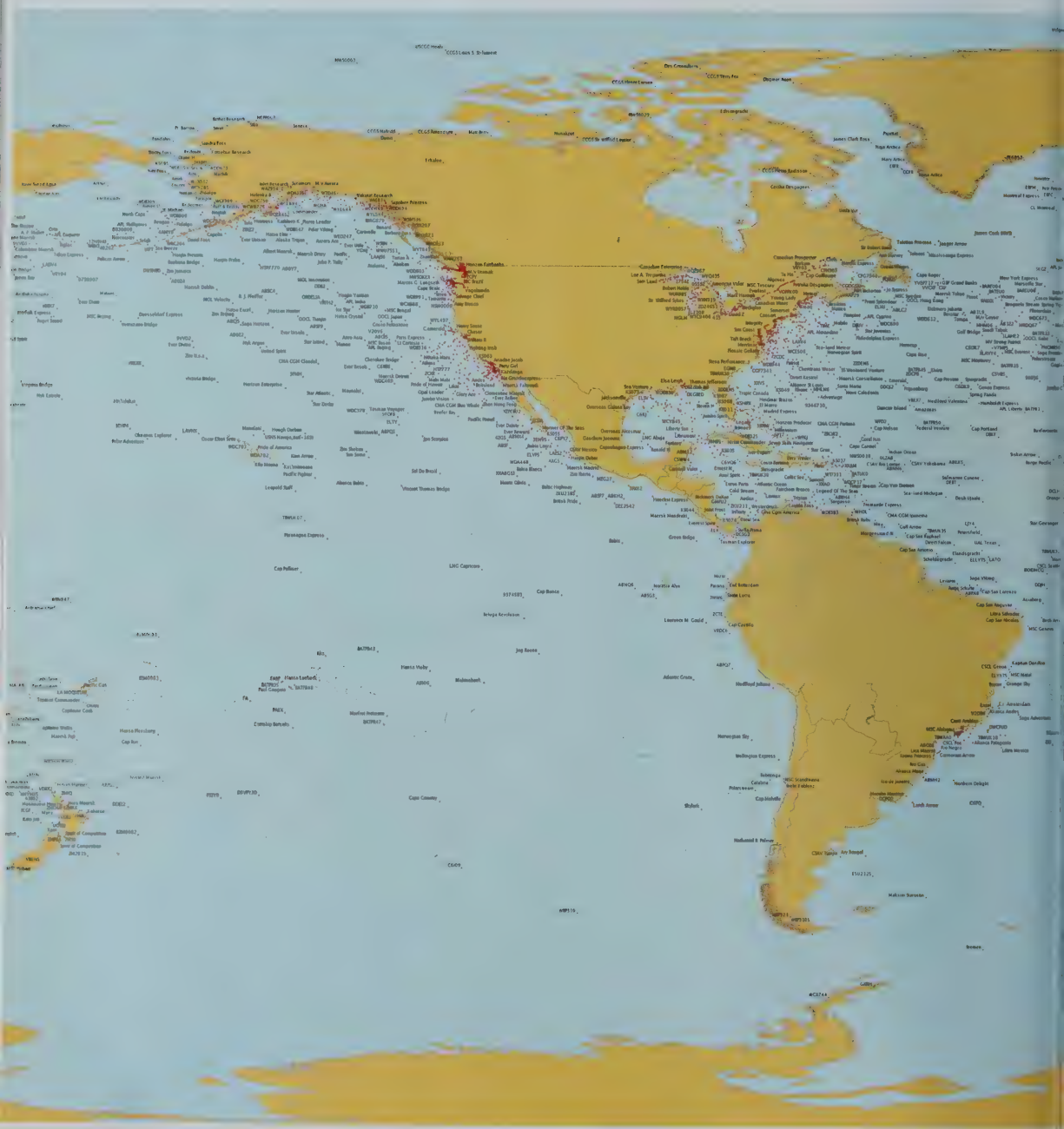
Jeanne Haffner PhD is an urban historian and a fellow at Harvard University. Her forthcoming book (MIT Press) examines the role of visual techniques in the evolution of the "new urbanism" in postwar France.



Things Visible and Invisible

The graphic presentation of infrastructural data yields more than a map.

by Jeanne Haffner PhD





SHIP LOCATIONS

This map shows positions and names (or identification codes) for commercial vessels around the world at 2 PM EDT on August 26, 2009. Commercial ship activity provides a largely unseen but vital transportation infrastructure. Created by Hal Mueller from a real-time tracker, the map is based on weather observations sent from ships every six hours and collated by the World Meteorological Organization; some additional positions were derived from Automated position reporting (AIS). Ships represented include supertankers, freighters, cruise ships, research vessels, and workboats. For more information, www.sailwx.info.

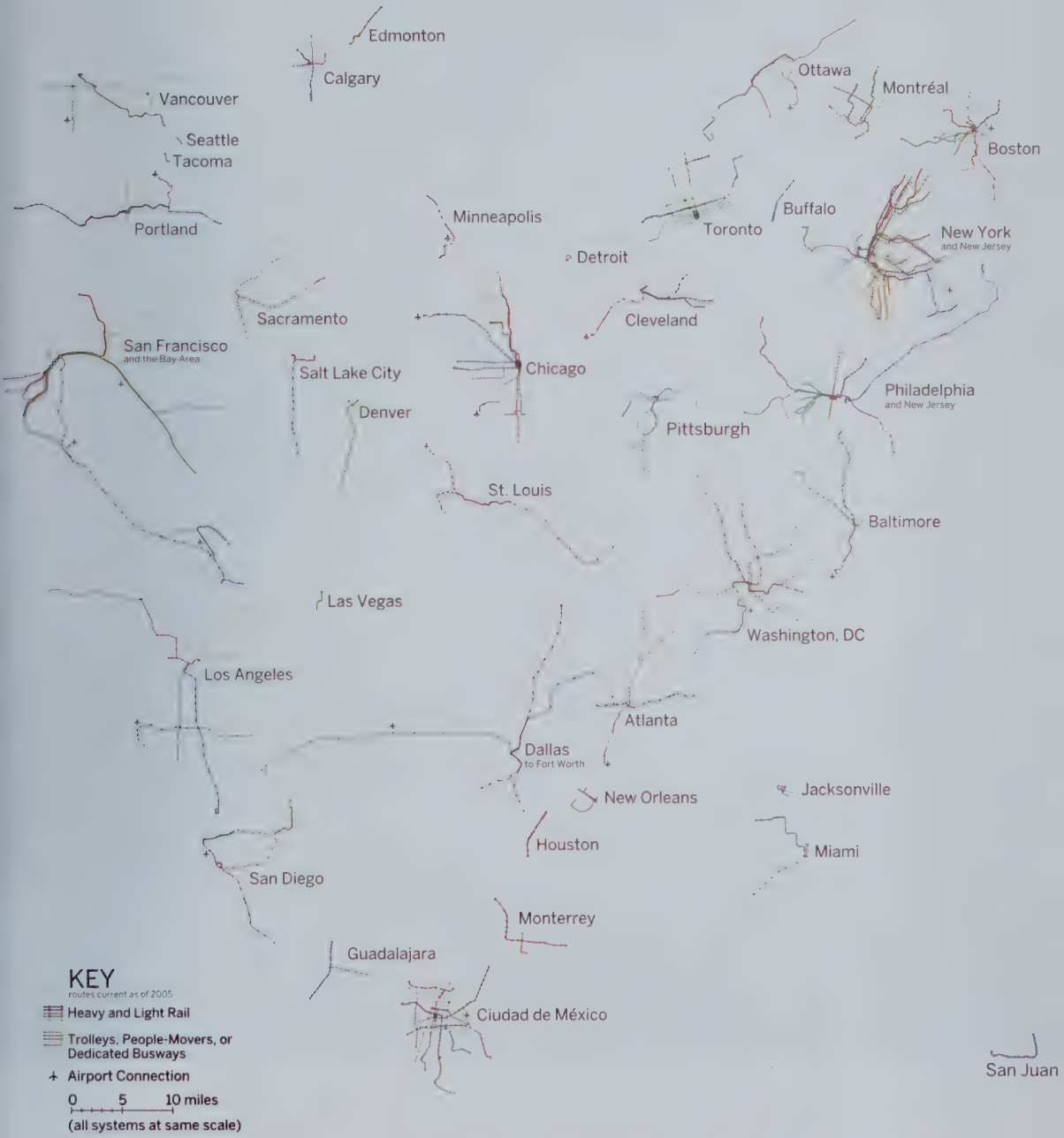


RING ROADS OF THE WORLD

A depiction of ring roads from 27 cities, all layered at the same scale. The largest, shown in black, is from Houston, Texas, home of Rice University School of Architecture, which commissioned the image in 2009 from Thumb (www.thumbprojects.com) as a poster. The second largest, shown in red, is Beijing.

NORTH AMERICAN MASS TRANSIT

In this image, the mass-transit systems of North America are all drawn to the same scale, and placed in relative locations. Current as of 2005, it includes regional or commuter systems that connect two downtown areas of comparable size. Revealing differences in both density and growth patterns, the map was created by Bill Rankin, now a PhD candidate in both architecture and the history of science at Harvard. For more information: www.radicalcartography.net.

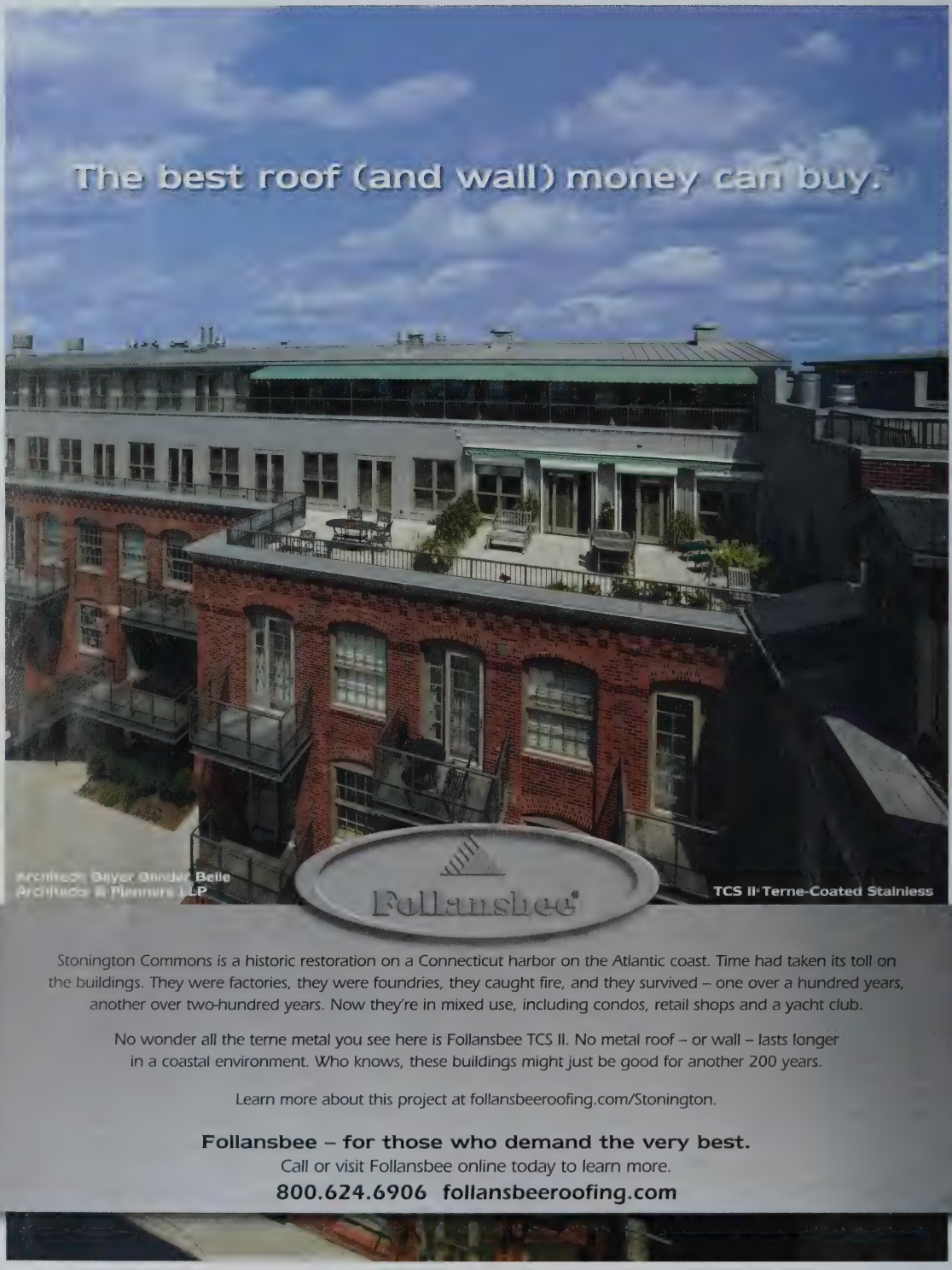




CELL PHONE USAGE
These two images are part of a series representing text messages sent in the city of Amsterdam on New Year's Eve, 2007. This page: activity at 9 AM. Page opposite: activity at midnight. SMS visualization tool developed by Aaron Koblin, with MIT SENSEable City Lab and CurrentCity, based on data from KPN Telcom. For more information: www.currentcity.org and www.aaronkoblin.com

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DAVID P. BILLINGTON is a professor of civil and environmental engineering at Princeton University, where he is the Gordon Y.S. Wu Professor of Engineering. He has curated numerous museum exhibitions and is the author of 10 books, including most recently *Power, Speed and Form: Engineers and the Making of the Twentieth Century* (with David P. Billington, Jr.); *The Art of Structural Design: A Swiss Legacy*; *Big Dams of the New Deal Era: A Confluence of Engineering and Politics* (with Donald C. Jackson); and *Felix Candela: Engineer, Builder and Structural Artist* (with Maria E. Moreyra Garlock).



JEFF STEIN AIA is head of the school of architecture and dean of the Boston Architectural College.

Civil Service

David P. Billington talks v

An engineer extols the virtues of efficiency, economy, and, yes, elegance.

Jeff Stein: A decade ago, *Engineering News Record* named you one of the top five educators in civil engineering since 1874.

David Billington: I don't know how they measured that but it was nice to hear it. I hold the world's record for having taught architecture students more years than any other civil engineering professor. Most civil engineering professors don't like to do that.

Jeff Stein: And in fact you teach one of the most popular courses at Princeton.

David Billington: It wasn't always that way. I was teaching architecture students in the early 1960s. After three years, they came to me and said, "Mr. Billington, you're a nice guy and you're a good teacher. But we hate what you're teaching us. You're just teaching us stick diagrams and formulas; we would like you to teach structures through something beautiful." They showed me pictures of bridges designed by Robert Maillart. I'd never heard of Maillart. And I had never heard of teaching structures that way.

Jeff Stein: Because you had been trained as an engineer.

David Billington: Yes. I had designed a lot of things that were built, but I must say, I'm not very proud of them aesthetically. They weren't bad, but they really weren't great. I had never designed with the thought of making something elegant.

I decided to look into Maillart and found that not only were his works beautiful, but they were also the best engineering I'd ever come in contact with. That sent me on a whole new track, and I began to teach a structures course to architects through beautiful works, slipping in the technical part. I finally decided that the course should be given to the whole university, not just to the architecture students. So I began in 1974 the course called "Structures in the Urban Environment," and it became popular.

After that, the associate dean came to me in 1984 and said, "We need a freshman engineering course." People are always trying to design freshman courses for engineers, and they all fail because they tend to lack an intellectual basis. Princeton had been offering a course that had just failed miserably — it had reached the list of the five worst courses in the university. It took me about five years to develop a course we called "Engineering in the Modern World." Between the two of them, we now teach something like a third of all students who go to Princeton.

Jeff Stein: In your courses, you don't just present the history of beautiful things and the lives of the great engineers, but you also talk about what they built and how — the notion of infrastructure and engineering generally, as well as the formulas that they use.

David Billington: If we didn't include the technical engineering aspects, I wouldn't teach it, even though the liberal-arts students groan sometimes. One thing that is interesting about "Engineering in the Modern World" is that it satisfies either the university's lab-science requirement or the history requirement. In my mind, that is only possible in engineering.

Jeff Stein: You recently wrote a wonderful book with your son, the historian David Billington, Jr. — *Power, Speed, and Form* — in which you talk about Othmar Ammann, the engineer of the George Washington Bridge. Ammann used a formula that you describe: $H=qL^2/8d$. Take that simple relationship, which refers to weight and size, and you can design a suspension bridge.

Top left: David P. Billington. Photo courtesy Princeton University, Office of Communication, Denise Applewhite. Left: Salginatobel Bridge by Robert Maillart, Schiers, Switzerland. Photo by Rama, Wikimedia Commons, Cc-by-sa-2.0-fr.

Sunniberg Bridge by Christian Menn, near Klosters, Switzerland. Photo by Christof Sonderegger, CH-9424 Rheineck.

David Billington: Of course, many of the formulas he eventually used were quite complicated. But that's the one he used for conceptual design. And there's a similarly simple formula in every branch of engineering.

Jeff Stein: In fact, you say that the people who have made the great leaps in engineering all used very simple math.

David Billington: That's right. I've found in my research that it's a characteristic of all the great innovators, because they had to think deeply and they couldn't get confused with complex mathematics. The people who followed them tended to focus on more refined details, and therefore used more refined mathematics. But the initial breakthroughs were not done that way. It was a surprise to me.



The two disciplines of structural engineering are efficiency and economy; the key to successful design is to find beauty within them.
David P. Billington

Jeff Stein: In effect, you found that there are two kinds of engineering thinking: normal thinking and radical thinking.

David Billington: Yes. In the courses that we mentioned, I'm interested in the radical thinking. Teaching upper-level or graduate courses in engineering is of course quite different — then I focus on more refined calculations. But first-rate conceptual design work happens on a much simpler level.

Jeff Stein: In the engineer's imagination.

David Billington: That's correct, the engineer's imagination. It's an interesting subject. Do you know who Jack Kilby was?

Jeff Stein: No, I do not.

David Billington: That's a little test. Almost nobody knows him. But he was comparable in the late 20th century to Thomas Edison in the late 19th century. He was the inventor of the microchip and the handheld calculator and eventually won the Nobel Prize. He once gave a lecture in which he talked about his early days. He had just been hired at Texas Instruments, and everybody had gone off on vacation. And so, as he said, he was alone with his "thoughts and his imagination." For a few weeks he worked on his own, and out came the microchip. No teamwork, nothing like that. It was entirely out of his imagination. But he was very well trained, of course. He knew the field. It wasn't blue-sky. Another great engineer, Robert Noyce, came to the same idea alone a few months later and the two men are recognized as co-inventors.

Jeff Stein: You have said that a number of engineers are like solo musicians who perform a complex work on their own without other instruments or accompaniment or even without a conductor.

David Billington: Teamwork has a value, of course, when you're doing incremental development of an idea, when you're trying to be competitive, or when you're refining a concept. And you certainly need teamwork to build things. But what's really interesting is what the engineer does best: imagine.

Jeff Stein: You have pointed out that modern engineering falls into four basic kinds of work: structures, machines, networks, processes. I am intrigued by the ways in which one engineering discipline can influence another. For example, you mention that the processing of iron ore brought about a broad rethinking of the whole tradition of building, which eventually led to a whole new aesthetic. Engineers in the 19th century started to talk about the new thinness of structural members in terms of elegance or beauty. The lightness of the material allowed structures to stand in contrast to the rest of the natural world. Did that appreciation of elegance have an enduring effect?

David Billington: In general terms, the ethos of modern engineering is efficiency. Efficiency is a loosely-used word, but I try to make it precise. Efficiency in engineering terms means minimum use of materials consistent with good performance and assured safety. That's the ethos of the engineer, and all engineers work under that in the modern world. That's different from the ethic of the engineer, which is essentially "Don't waste money" — consistent, of course, with good utility and minimum maintenance. Elegance is a personal expression of the designer, in structures anyway. But because something is efficient does not mean it will be elegant. And elegance does not depend upon efficiency.

Jeff Stein: That's a really important point, because people who aren't engineers imagine that that would be the case. In fact, architects tend to imagine that the elegance of engineering comes from its efficiency.

David Billington: That's wrong. For instance, the typical steel truss is probably the most efficient structure you can imagine for a lot of uses, and it's almost always ugly. The two disciplines of structural engineering are efficiency and economy; the key to successful design is to find beauty within them. Or as Félix Candela, one of our heroes, said, to avoid the ugliness without wasting materials and money.

Jeff Stein: You wrote, "Some bridge forms have been imagined by architects, but the best are purely the work of engineers." I'm sure that will make some architects unhappy.

David Billington: The engineer makes forms that control forces, whereas the architect makes forms that control spaces. The architect is essentially lost when trying to design a great bridge. So the architect tries to make up for it, and in the process, loses the disciplines of efficiency and economy. Santiago Calatrava is a good example. He has caused the quality of bridges to drop precipitously in this country, because what he does is immensely expensive. I talk to DOTs [Departments of Transportation] all the time, and they all have the same opinion: "If we want a beautiful bridge, we have to go to Calatrava, and it will cost three times what the others cost. We can't afford that, so we're just going to pull out of the drawer the standard bridge." What they're saying in effect is that the engineer has no aesthetic at all — or that the aesthetic is the purview of architects and something they can't afford. And so the DOTs are defaulting to ugly, standard bridges.

Jeff Stein: What about Christian Menn?

David Billington: Christian Menn is probably the greatest living bridge designer. He's a pure engineer.

Jeff Stein: We adore his work here in Boston, where we have the Zakim Bridge [Leonard P. Zakim Bunker Hill Bridge]. It's meant to signify the new Boston.

David Billington: You're lucky to have it. Princeton is building a Menn bridge on the campus now that will be the second one in this country. It's too bad we don't have 25 bridges of his.

Jeff Stein: Menn is from Switzerland; you've written about him as well as several other engineers in *The Art of Structural Design: The Swiss Legacy* — Wilhelm Ritter, Robert Maillart, Othmar Ammann, Pierre Lardy, Heinz Isler. What in the Swiss culture has led to so many talented engineers producing so many beautiful bridges? Is it the country's dependence on tourism?

David Billington: No, I would argue with that. It all comes from the Federal Institute of Technology and their first professor of engineering, Karl Culmann. I don't remember that he ever talked about tourism. His greatest student, Wilhelm Ritter, became a professor in Zurich and wanted his students to design beautiful, elegant, efficient, economical bridges, and that's what he taught. Maillart and Ammann studied under him.

Unfortunately for potential tourists, Maillart's bridges are very hard to find, because the higher art world wouldn't allow him to build anything in a city, with the exception of the Vessy Bridge in Geneva. Everything else he did is way out in the wilderness, where they needed somebody who could build on difficult sites and still do it economically. But some of Menn's bridges are in prominent locations and could be tourist attractions.

Jeff Stein: In fact, two of Menn's bridges in Switzerland are understood to be among the 10 most beautiful in the world. He says he hopes to create "motionless objects of stunning elegance."

David Billington: That's exactly what he does.

Jeff Stein: One of the challenges for great works of civil engineering is that they are expected to last for a very long time, but are exposed to all kinds of weather and conditions. Design and construction is one thing; maintenance is another. Here in Massachusetts, there are 1,100 bridges that have been inspected but not maintained and are in what the inspectors describe as a state of mild failure.

David Billington: They perhaps exaggerated a little bit to get attention, but at the same time it is perfectly true that our infrastructure — and bridges are a most visible part of the infrastructure — is in bad shape. Every once in a while, one falls down and kills people, and then everyone gets excited. And then they forget about it. It's a very difficult issue to keep on the front page. The problem of maintaining bridges and avoiding those catastrophes is a live problem.

Jeff Stein: You have said that we live in an engineering culture, which has dominated our history at least since the Industrial Revolution, and that it is therefore very important for the general public to know about engineering. Would greater engineering literacy help us solve this issue?

David Billington: The tendency in America is to be fixated on what's new, and that leads to a misunderstanding of how things were built to begin with. People tend to think that brand-new ideas drive change, but that's not the way things develop. We don't make radical changes until there is a real crisis. Infrastructure gets lost in this kind of environment. People might talk about new materials, for example, but having a new material isn't going to help the bridges much: you can't tear them all down and rebuild them out of some kind of plastic.

Jeff Stein: It's part of our culture, as you've noted — we learned to see engineering as a way to solve many of the problems that arose in this big, uncoordinated, disconnected continent. Your work puts engineering and infrastructure in a context that we don't often think about by humanizing engineers, describing their connections to particular places, and exploring the sources of their ideas.

David Billington: The way we view engineering has changed, and needs to change more. The average engineer in the late 19th and first half of the 20th century was a farm boy, the result of the Morrill Act that created the great engineering schools of the Midwest. Most of the schools in the East gave up engineering; fortunately, Princeton didn't. It wasn't considered an elite or

intellectually interesting subject; it was for farm boys. That was great for a while, but it's not great now. Engineering needs to be shown as a very stern and deep intellectual subject.

Jeff Stein: That's how it's always been perceived in Germany and Switzerland.

David Billington: Perhaps more so in Switzerland than Germany. And they have benefitted from it. We can learn a lot about infrastructure from small countries like Switzerland, the Netherlands, Norway, because those countries have confronted and solved some very difficult infrastructure problems.

A good example is the Lower Mississippi, which is the most crucial problem for us right now. There is a solution, and it comes from the Netherlands, because they have faced the same problem — a big delta. One of my missions in life is to try to make that connection, because I've lived in the Netherlands and can read Dutch, and so I know in some detail what they were able to accomplish. You have probably never heard of Johan van Veen or Cornelius Lely. But they are the heroes of the 20th century, because these two people literally saved a whole country. They had help along the way, of course, but they were the radical innovators that made all the difference. They both combined engineering and political talent with a depth of knowledge that puts them in the same category as any philosopher, historian, or intellectual.

Our vast country is made up of regions that are quite different from one another, and we need to understand those differences and find appropriate designs, the best of which are sometimes found abroad and can stimulate us to better designs here.

Jeff Stein: Right. The Lower Mississippi has a very different set of conditions from the West Coast, which in turn has seismic conditions that we don't have in the Northeast.

David Billington: Now I want to say something about Boston, which you won't want to hear. I think that the Big Dig was a huge mistake. First of all, it was supposed to cost $3 billion and is now about $22 billion. And that is wasted money. The reason it's wasted money is that Boston, as you well know, is a landfill city built on muck. And you don't easily build tunnels in muck.

Jeff Stein: Well, we've learned that by building tunnels in muck.

David Billington: It's the wrong form. I can understand why they wanted to tear down the Central Artery. But they should have built a truly elegant set of overpasses, and they would have had a dramatically beautiful solution that would have cost $3 billion, not $22 billion. Seattle is about to make the same mistake, building a tunnel in landfill so they can have a park on top.

Jeff Stein: They had the same problem — an aging overpass running through the city.

David Billington: The key is to ask the right questions or raise the right objections in the beginning. Going back to the Lower Mississippi, Katrina is, of course, a real national tragedy, and still there's nothing being done about it. We criticized the previous administration for their handling of it, justifiable criticism for sure. But the real criticism has to go way back to the 1970s, when officials were preparing a plan after Hurricane Betsy. It was torn apart by environmentalists who were worried about the shrimp in Lake Pontchartraine. The environmentalists beat back the Corps of Engineers, and the Corps of Engineers was too flaccid. It gave up. So the city did not receive the protection it needed. It's not just the environmentalists' fault — the point is that there was no strong engineering presence such as a Lely or van Veen to argue for the bigger picture and common sense that might have protected the city.

Jeff Stein: And now, of course, there are arguments about whether to go ahead with anything much in New Orleans. Given the warming of the Gulf of Mexico, it's certain that Hurricane Katrina will not be the last devastating storm — the next ones will be even worse. And so how many times can we afford to rebuild that city?

David Billington: Just once more, I think. If we don't do it right this time, then we'll give it up. But I think it would be a terrible mistake to give up now, a terrible thing to do to that city. And Baton Rouge, too, as well as the whole lower Mississippi River corridor.

Jeff Stein: You are in an unusual position as both an engineer and an historian — it allows you to look backward and forward at the same time. The kinds of things we're talking about present enormous challenges. Can you predict how or where we will find solutions?

David Billington: I do not use history to make predictions. Since the Industrial Revolution, certain patterns have emerged and been constant through the late 20th century. That says, I believe, something very fundamental about our political system and about people in general — which is somewhat different from a prediction.

Jeff Stein: So what do those patterns tell you?

David Billington: What they say, to me anyway, is that real advances take place through the work of people acting individually, not committees and teams. When we have a problem in this country, we create a commission. And the commission creates a report, which is usually anonymously written. There's no author. But there are always large numbers of people involved. And the results are often not as compelling as they could be.

In an engineering society, such as the society we've lived in for 200 years, individual people make a huge difference. Once they make a huge difference, you need teams to implement their work. But if you're going to have real change, it has to be done by individual engineers and they need to be recognized along with presidents and generals. ■



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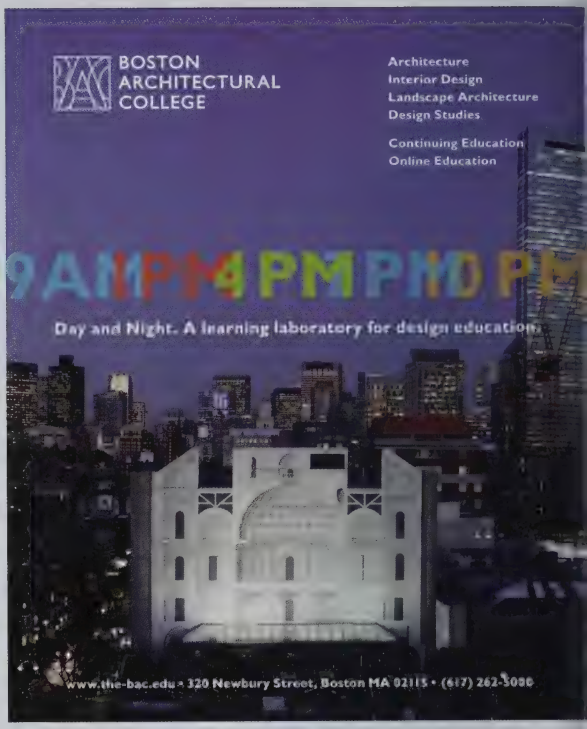
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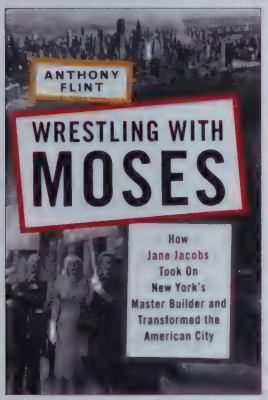
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WRESTLING WITH MOSES: HOW JANE JACOBS TOOK ON NEW YORK'S MASTER BUILDER AND TRANSFORMED THE AMERICAN CITY
By Anthony Flint
Random House, 2009

If you're intrigued by the epic battles between Jane Jacobs and Robert Moses in 1960s Manhattan, you've probably read both Jacobs' 1961 *The Death and Life of Great American Cities* and Robert Caro's 1974 *The Power Broker*. But these books address the battles only indirectly. In *Wrestling with Moses*, Anthony Flint supplies the missing piece: a journalistic account of how Jacobs, the improbable underdog, actually fought and won them — and eventually the war, too.

The debate wasn't just about whether to destroy the West Village in order to save it or to blast an elevated highway across Lower Manhattan. It was about competing ideas of city-making, fought between two burning souls who each believed they had the city's welfare at heart.

Moses the master builder, the most powerful public official never elected to office, believed in modernization at any cost. He built parks and affordable housing but not transit; he wanted to make New York safe for cars. He was deft at building momentum and garnering federal funding. He believed you had to start quickly before opposition could mobilize.

Jacobs, an unschooled housewife from Scranton, used observation and common sense to understand cities better than the professional planners and found herself in the vanguard of a movement. She thought cities should be treated the way she renovated her Hudson Street house: carefully, one self-installed bathroom fixture at a time.

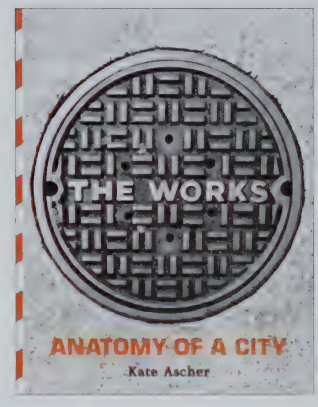
Flint tells an absorbing David-and-Goliath tale, describing planning issues engagingly for a wider audience. He tries to be fair toward Moses, but he clearly favors Jacobs — just as history has. An epilogue reviews their legacies lightly and evenhandedly. Moses long ago fell from grace. He made the wrong bet on the automobile. Corrupted by power, his methods became increasingly unsavory. He is only now being cautiously re-appraised as we face more ambitious urban infrastructure needs than public officials can deliver.

In contrast, by the time Jacobs died in 2006, she was lionized in the planning schools she once attacked, the "blighted" streets of Greenwich Village had become precious, and many cities were erasing their expressways and super-blocks, which only accelerated the decline they aimed to arrest. Jacobs has now become a kind of Moses herself, *Death and Life* her stone tablets.

But her legacy of citizen activism unleashed furies that bedevil us today. Inspired by Jacobs, neighbors oppose any change at all, even though her walkable urbanism is now planning orthodoxy. It's become fashionable to credit her with too much. The emerging knowledge economy has validated her insights in ways she perhaps foresaw, but didn't cause.

One only wishes Flint wrestled with Moses — and Jacobs — a bit more. The question he leaves hanging in the air is how we can synthesize their divergent virtues to shape cities for their coming challenges.

Matthew J. Kiefer is a land-use attorney at Goulston & Storrs in Boston. He teaches in the urban planning program at Harvard Graduate School of Design.



THE WORKS: ANATOMY OF A CITY
By Kate Ascher
Research by Wendy Marech
Designed by Alexander Isley Inc.
The Penguin Press, 2005

In the wake of the September 11 attack on New York City, Kate Ascher followed its effects on the city's infrastructure, some of which came to a complete halt. This dramatic event caused her to consider the value of the mundane: how the city moves people and freight, supplies power and communications, and keeps itself clean. A former Port Authority employee and executive vice president for infrastructure at the New York City Economic Development Corporation, Ascher delved deep into the guts of NYC to write *The Works: Anatomy of a City*.

Each day, we perform simple, mindless tasks such as flipping light switches, flushing the toilet, or taking out the trash. "Largely invisible and almost always taken for granted, these are the basic building blocks of urban life," Ascher says of the systems that sustain our cities and proves that infrastructure isn't a boring topic, after all. Imagine cutting a huge cross-section through a city, exposing its hidden inner workings: the subway and automobile tunnels, the sewer systems, the telecom lines. With the aid of exquisite color diagrams and illustrations, Ascher breaks down infrastructure into six easily

digestible sections: Moving People, Moving Freight, Power, Communications, Keeping It Clean, and the Future.

The Works is full of interesting facts that make for great cocktail-party ice-breakers: Do you know what happens to retired subway cars? (They're dumped on artificial reefs and become homes for sea mollusks and fish.) Have you ever wondered how the ceilings of tunnels are cleaned? (By giant electrical toothbrush trucks!) Why do radiators clang? (Water drops condensed from steam, called "traveling slugs," slam at the turns of a pipe.) So that you can really impress your friends, it also includes keys to decode repair crews' spray-painted street symbols, the meanings behind manhole-cover designs, and exactly what those subway signals indicate.

Ascher contrasts old systems with their modern equivalents. For example, between 1897 and 1953, mail in NYC was transported by the Pneumatic Tube Mail Network, a system of underground pipes featuring steel cylinders that were greased and blown from Herald Square to Grand Central in four minutes. Modern mail is electronically scanned and bar-coded before being delivered, a process that takes much longer than four minutes. Despite all the obscure and interesting facts Ascher uncovered in her research, the most surprising topic to her was simple electricity: "Considering all that is involved in its production and delivery, it's amazing that it works 99.9% of the time."

A coffee-table book as well as a detailed reference guide, *The Works* is a fascinating read for young adults and professionals alike. Although *The Works* is NYC-centric, most of the topics explored apply to any large city and will surely appeal to the geek within each of us.

Murrye Bernard is a freelance architectural writer in New York City. She is also a contributing editor for *eOculus*, the newsletter of the AIA New York Chapter.



PUBLIC WORKS: UNSOLICITED SMALL PROJECTS FOR THE BIG DIG
By J. Meejin Yoon with Meredith Miller
MAP Book Publishers, 2008
Distributed by DAP

The response from the architectural community to the Big Dig since its completion has been minimal. In part, this



is due to the marginal contribution that architecture plays in the overall Big Dig schema. The tunnel is a transportation success but is not inherently an architectural proposition: it is an infrastructural space of speed and utility. Above ground, the desires of the architectural community to stitch the interrupted urban fabric back together with buildings were quashed by both the open-space advocates and the economic realities of building over the tunnel. Relative to the scale of the Big Dig, the architecture is tangential.

Into this gap comes *Public Works: Unsolicited Small Projects for the Big Dig* by J. Meejin Yoon, Meredith Miller, and MY Studio: a welcome provocation regarding the design of the new open-space territory created by submerging the Central Artery. Not quite a "book," this work is more an annotated exhibition of Big Dig data, analyses, and hypothetical design proposals in bound form. There are six interrelated themes explored that range from park space and infrastructure to service buildings and urban furniture.

Public Works succeeds at collecting data about the Big Dig and illustrating the information in clear analytic diagrams. This information alone makes this work a valuable reference both for facts regarding the Big Dig and for graphic strategies for "visualizing information" in the spirit of Edward Tufte.

In *Public Works*, the data-cum-analyses form the basis and rationale for a series of design proposals meant to augment and intensify the experience of the Rose Kennedy Greenway. Embodied in this collection of speculative interventions is an overly polite critique of the Greenway and its superficial relationship to both the surrounding city and the infrastructure below. What emerges from Yoon and Miller's series of interventions is a dynamic, digitally controlled environment that can adapt to the user, the program, and the urban context. These slightly subversive interventions, however, rarely transcend their diagrammatic state. They do not possess the rigorous specificity of MY Studio's previous successful projects that combine sophisticated sensors with public interaction in urban environments. Instead, these projects for the Greenway remain mere impressions of a future techno-landscape.

More importantly, however, *Public Works* is an invitation to the architectural community to think critically about the resultant architecture and urbanism of the Greenway now that the city has started to recuperate from the construction failures, budget overruns, and political wrangling that has dominated the public discourse about the Big Dig. As a confluence of data, analysis, and design, *Public Works* suggests that the public spaces of the Big Dig have only just begun to emerge, that they have significant unrealized potential, and that architects need to engage them with innovation and imagination.

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INFRASTRUCTURE 2009: PIVOT POINT
www.uli.org/ResearchAndPublications/Reports.aspx
Perhaps the best summary of the state of US infrastructure today, and a cogent call for "a total revamping of how the country plans, funds, and implements infrastructure programs." An excellent resource from the Urban Land Institute.

THE TRANSPORT POLITIC
www.thetransportpolitic.com
Wondering what other cities have in the works for mass transit? Or what projects are getting financed — or not — and why? Here's a blog for the transit-obsessives among you.

VISUALIZING THE U.S. ELECTRIC GRID
www.npr.org/templates/story/story.php?storyId=110997398
This fascinating map-based website, originally developed for an NPR story, delivers what it promises, as it links the local and familiar with a view of national networks, including alternative energy efforts.

THE MANNAHATTA PROJECT
http://themannahattaproject.org
"Ever wondered what New York was like before it was a city?" A digital reconstruction of Manhattan's forests, streams, and meadows — the ecological infrastructure that came before the built variety.

TUNNEL NETWORKS
www.oobject.com/category/12-of-the-worlds-most-fascinating-tunnel-networks
The Paris catacombs, the Disney Magic Kingdom tunnels... who is not intrigued by the under-world? Check them out, and then go play on the rest of the Oobject site. This list of lists includes such treasures as 15 high-speed trains, 10 obsolete web browsers, 12 inhabited bridges, 12 stunning rooftop gardens...

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
http://transportation.house.gov
Want to know what the House of Representatives is doing about the nation's infrastructure? News, reports, webcasts of hearings — it's all here.

THE INFRASTRUCTURIST
www.infrastructurist.com
"America Under Construction." A smart, irreverent blog for those who are weirdly fascinated by all things infrastructure, as well as resources including train talk with Michael Dukakis, a field guide to highway intersections (spooeys, anyone?), and the incomparable gallery of cell towers pretending to be trees.

We're always looking for intriguing websites — however rusty the connection to architecture. Send your candidates to: epadjen@architects.org.

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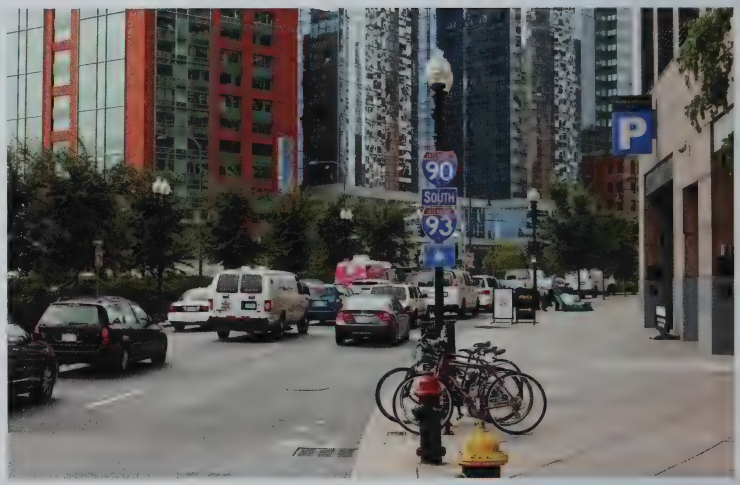
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Surface Road



v Photo by Mary Ross.

A block of Surface Road runs through downtown Boston unmarked by any plaque. No one visits. It's a silent memorial. This is where, in the spring of 2006, the last piece of the Central Artery was finally pulled down.

We all know why the Artery had to go: it was hideous, congested, misconceived. An icon of everything wrong with mid-century urban planning.

And I miss it.

Twenty years ago, I would drive into Boston, and it was the strangest and most spectacular thing I had experienced in a car: you would rocket through downtown three stories in the air, weaving among office buildings like a 1940s vision of the future. If you walked on the street below, the Artery was a looming presence, almost geological, cupping a whole realm of the city in shadow. If you got trapped in traffic, which happened a lot, you were captive to a panoramic view.

The Artery was a rusting eyesore, but it was something else as well: the grandest and most unapologetic piece of infrastructure in the city. With the Artery above and the subways thrumming below, downtown Boston evoked the busy optimism of another time — crowds of men with hats; tubes and ribbons of people at every level flowing through the city.

To look back at newspapers from the 1950s and see the color drawings of the young Artery is a revelation: it was a clean highway in the sky, magically stitching the city's streets into the young American interstate system. When the magnificent thing finally appeared, it wasn't alone overhead. The Green Line straddling Causeway Street on its muscular viaduct, the elevated trolley down Washington — the city wore its transit like a brace.

Today, the sign that we value a city, or a neighborhood, is that its infrastructure is invisible: if you want to see where the rich people live, look where the power lines aren't. If you are like me, and you like to see the joints and sinews as well as the surface, you have to visit Boston's lingering industrial zones, or hunt underground — the inexplicably grand Courthouse Silver Line station; the strange, derelict telephone network inside the Red Line tunnels. Cities are being re-imagined as charming and walkable, as though the massive roads and tracks that feed them were secondary, not essential.

People did not always feel this way about their infrastructure. In ancient Rome, fresh water traveled from the mountains in magnificent arched aqueducts that still inspire awe; once in the city, it sprang from grandiose fountains and baths as if to announce: *This is how we became Rome.*

Today, we have a system that beggars even Rome's, yet the water slips quietly through a conduit beneath Boston College, a marvel of engineering that's not only unmarked, but also unfindable. It would be impossible to imagine an electrical transformer proudly displayed in a public park. And the greatest supply of all, the human beings who are the oxygen of the city itself, now flow invisibly beneath South Station and flash back into the sun once they're safely out of downtown. When they're trapped in traffic, they see not the fabric of Boston, but the walls of the buried vein that shunts them beneath it.

I'll admit that over time, after I moved here, I came to hate the Artery, too: its gnarled spine, its seemingly permanent rust, the way it shook beneath your wheels when trucks went by. Whatever the flaws of the Greenway, it's hard to imagine capping off its open sky with a new steel overpass.

We can dismiss the old Artery, but we can't dismiss what it meant. A moment when to be modern meant to look proudly on the achievements that got us here, to be proud of all the pipes and not just the pretty brick streetscapes they nourish — to stand in wonder at the truly wondrous thing. ■

Stephen Heuser is the deputy editor for the Ideas section of *The Boston Globe*.

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